C5510MFP/C5540MFP Service Manual

Contents

1. INTRODUCTION 1-1

1.1 SERVICE NOTES 1-1
1.2 GENERAL DESCRIPTION 1-2
1.3 FEATURES 1-2

2. SPECIFICATION 2-1

2.1 SPECIFICATION 2-1

3. UNPACKING, INSTALLATION, AND TRANSPORTATION 3-1

3.1 PRECAUTIONS OF INSTALLATION 3-1
3.2 UNPACKING PROCEDURE 3-2
3.3 INSTALLATION 3-3
3.3.1 Unlocking the Scan Unit 3-3
3.3.2 Installing the Paper Feed Tray 3-3
3.3.3 Connecting the Ethernet cable 3-4
3.3.4 Connecting the printer cable 3-4
3.3.5 Connecting the ADF Cable 3-5
3.3.6 placing your document(s) in the adf 3-6
3.3.7 Placing your document(s) on the glass 3-6
3.4 TRANSPORTATION 3-7

4. PARTS IDENTIFICATION 4-1

4.1 EXTERNAL VIEW 4-1
4.1.1 Front view 4-1
4.1.2 Rear view 4-2
4.1.3 Control Panel 4-3

5. THEORY OF OPERATION 5-1

5.1 INTRODUCTION 5-1
5.2 MAIN CONTROL UNIT 5-2
5.2.1 System diagram 5-2
5.2.2 Main Control circuit 5-3
5.2.3 Video circuit: 5-5
5.2.4 Panel and lcd module Circuit 5-7
5.2.5 Modem interface 5-8
5.2.6 Sensor input 5-9
5.2.7 Sub power supply circuit 5-9
5.2.8 Power supply 5-10

6. TROUBLESHOOTING 6-1

6.1 TROUBLESHOOTING FLOWCHART 6-2
6.1.1 Power on to C5510MFP/C5530MFP ready 6-2
6.1.2 Copy operation 6-3
6.1.3 Email Operation 6-4
6.1.4 Contorl panel operation 6-5
6.2 TABLES 6-6
6.2.1 LCD does not display 6-7
6.2.2 Printer does not react 6-8
6.2.3 scanning is not performed 6-9
6.2.4 printer does not print 6-9
6.2.5 Image unclear 6-10
6.2.6 noise generated 6-10
6.2.7 LCD does not show message after command 6-11
6.2.8 C5510MFP/C5530MFP is not connected to the network 6-12
6.2.9 C5510MFP/C5530MFP cannot send email 6-13

7. PREVENTIVE MAINTENANCE 7-1

7.1 CLEANING THE DOCUMENT GLASS 7-1
7.2 CLEANING THE ADF 7-2
7.3 CLEANING THE ADF 7-3
7.4 REPLACING THE ADF PAD 7-4

8. DISASSEMBLY 8-1

8.1 SERVICE TOOLS 8-1
8.2 LUBRICANTS 8-2
8.2.1 Mechanical Unit Lubrication 8-2
8.3 PROCEDURE FOR DISASSEMBLY AND REASSEMBLY 8-4
8.3.1 Notes on disassembly 8-4
8.3.2 ADF(Auto Document feeder) unit Removal 8-5
8.3.3 Control Panel PCBA removal 8-7
8.3.4 Document cover 8-9
8.3.5 Upper housing 8-10
8.3.6 Main Control Board Assembly 8-12
8.3.7 Motor belt 8-13
8.3.8 Optical chassis 8-14
8.3.9 CCFL Inverter PCBA 8-16
8.3.10 Lamp assembly 8-17
8.3.11 Motor unit 8-18

9. PARTS 9-1

9.1 SPARE PARTS LIST 9-1

1. INTRODUCTION

1.1 Service Notes
1.2 General Description
1.3 Features

This manual is intended to be used by the maintenance engineers. It describes areas to be maintained, the detailed installation steps, the component replacement procedures, and the main trouble shooting guides.

Before serving the unit, read this manual thoroughly to obtain comprehensive knowledge about OKI C5510MFP/C5530MFP.

1.1 SERVICE NOTES

(1) Before trying to disassemble the C5510MFP/C5530MFP, make sure the power supply cord of the C5510MFP/C5530MFP is disconnected from the power outlet. Under any circumstance, do not remove from or install the PWBs or connectors onto the C5510MFP/C5530MFP with the power switch turned ON.

(2) Be careful not to drop small parts or screws inside the unit when disassembling and reassembling it. If left inside, they might cause the malfunction of the unit.

(3) Do not pull the connector cable when disconnecting it. Hold the connector.

(4) When carrying PWBs or the scanning head unit, put it in an anti-static bag.

(5) Keep the document table glass surface always clean. If contaminated, the glass surface should be cleaned with a dry clean cloth.

(6) Be careful not to injure your fingers or hands while disassembling or reassembling the unit.

1.2 GENERAL DESCRIPTION

OKI is pleased to introduce its latest innovation, the C5510MFP/C5530MFP, to offer business professionals a fast and cost-effective way to transmit paper documents electronically over the intranet and internet. With the speed and low cost of e-mails, the C5510MFP/C5530MFP significantly increases productivity and reduces the cost on document distribution.

With the addition of a laser printer, C5510 or C5530, the C5510MFP/C5530MFP is able to perform digital copying. Through the intranet with FTP, HTTP, or CIFS protocol, the C5510MFP/C5530MFP allows you to send digital document directly to a designated server or personal computer's file folder. The innovation provides business users with a cost-saving way to upgrade office equipments to digital ones and makes good use of the corporate intranet to maximize work efficiency.

1.3 FEATURES

- **Scan to E-mail:**
  Connected to an Ethernet network and a SMTP server, the C5510MFP/C5530MFP allows you to transmit document(s) over the internet via email. With a touch of the e-mail button and the selection of your recipients' e-mail addresses, the document(s) is first scanned and converted into an image file, and then transmitted to remote recipients within minutes.

- **Scan to Filing:**
  Through the intranet with FTP, HTTP, or CIFS protocol, the C5510MFP/C5530MFP allows you to put document directly to a designated server or personal computer's file folder in one of these compressed formats, pdf, tiff, and jpeg.

- **Copy:**
  Connected to a C5510 or C5530 printer, the C5510MFP/C5530MFP becomes a digital copier. With an intuitive control panel, making digital copy becomes fast and easy.

- **Batch Delivering:**
  The C5510MFP/C5530MFP allows a batch of 25 page document(s) to be continuously scanned and delivered at one time in reliable quality to increase your efficiency.

- **Remotely Managing the Address and Profile Book**
  When you type the machine's IP address in the URL field of your browser, the OKI Java-Manager allows you to enter a password for the administrator to create address/phone book and provide security control over the entire address and profile book.

2. SPECIFICATION

2.1 Specification

2.1 SPECIFICATION

Items	Specifications
General Specifications	
System Description	Multifunction Scan Station
Image Sensor	Color CCD
Light Source	Cold Cathode Fluorescent Lamp
Optical Resolution	600 x 600 dpi
Output Quality	Input: 48 bits color Output: 24 bits Color 8 bits Gray 4 bits CMYK 1 bit Monochrome
Memory Size	2.5 Mbytes
LCD Size	Text, 24x2, mono
LED Indication	Power saving Warning Power
External Connections	RJ-45 (for Network connection) ADF port
Network Connection	10/100 Mbits auto-negotiation
Networked Workgroup Solution for:	Stand-alone Copy E-Mail via Internet/Intranet Filing

Output Format	PDF, JPEG, TIFF
Dimension	444x373x372(mm)
Weight	6.2 kgs (With ADF)
Power Source	Input: 100~240V, 50~60 Hz Output: 24V DC, 2A
Power Consumption	Working <36W Standby <24W Sleep < 18W
Interface USB 2.0 host USB 2.0 device Ethernet 10/100Mb	 Copy Scan, Print Email, Scan to file, Print
Operating Temperature	10~35 degrees C, 10~85% RH
Storing Temperature	-20~60 degree C, 10~90% RH
Auto Document Feeder	
Capacity	25 sheets
Dimension	434x292x177 mm
Weight	1.6 kgs
Document Size	4.5” x 5.5” ~ 8.5” x 14”
Document Weight/Thickness	16 ~ 28 lb / 0.002” ~ 0.006”
Paper Feed	Face Up
Copy Specification	
Printer	OKI C5510/C5530
Printer Language	GDI(Hyper-C), PJL
Printer Interface	USB2.0
Multiple Copies	Up to 99
Copy Resolution	600 x 600 dpi
Copy Type	Plain paper, Ultra heavy, Transparency
Copy Quality	Speed, Fine
Density Control	5 Levels
Background Remove	Yes
Enlarge / Reduce	Whole Page (93%) 25%~400% in 1% increment/decrement Pre-set Scales

Input Tray	Auto /Tray 1/MP Tray
Paper Supply	Letter SEF (Short edge feeding) Legal SEF A4 SEF B5 SEF A5 SEF A5 SEG
Edge Erase	USA: 0~1 inch Europe: 0~25mm
Margin Shift	USA: 0~1 inch Europe: 0~25mm
Paper Saving (N-Up)	1 /2 /4 in 1 page
Collate	On/Off
Job Counting	Copy, Scan, Print Enable/Disable
Network Specification	
Connectivity	Ethernet 10BaseT/100BaseTX auto-negotiation with RJ-45 connector
Communication Protocol	TCP/IP, SMTP, HTTP, MIME, FTP, CIFS, DHCP, DNS, LDAP
Supported Browsers	Microsoft IE 4.1 or higher Netscape Navigator 4.0 to 4.78
Configuration Requirement	IP address Subnet mask Gateway SMTP server/POP3 server FTP server Web server

E-mail Specification	
Communication Protocol	SMTP, MIME, POP3
File Formats	
B&W	PDF, TIFF, MTIFF
Gray/Color	PDF, TIFF, MTIFF, JPEG
Default File Format	PDF
Separation Limit	1MB, 3 MB, 5MB, 10 MB, 30MB, No limit
Resolution	75, 100, 150, 200, 300, 400, 600 dpi
Default Resolution	
B&W	200 dpi
Gray/Color	150 dpi
Address Book Volume	
Max. Addresses	100
Group	20
No. of Addresses in Each Group	50
Multiple Recipients Allow	Yes
Security Check	Yes
Mail Server Authentication	SMTP, POP3
Supported Mail Server Application	Lotus Mail Server 5.0 MS Exchange Server 2000 RedHat 7.0 SendMail MAC Mail Server in OS 9.04
Supported LDAP Server	Windows 2000 Active Directory Windows NT 4.0 + MS Exchange 5.5 Lotus Notes R5
Supported Mail Application	Microsoft Outlook 2000 Microsoft Outlook Express 5.0 Microsoft Outlook Express 6 Netscape Messenger 4.7 Netscape Messenger 4.73 MAC built-in MAIL application Eudora 4.3.2J Lotus Notes R5

Filing Specification	
Communication Protocol	FTP, HTTP, CIFS
File Formats	
B&W	PDF, TIFF, MTIFF
Gray/Color	PDF, TIFF, MTIFF, JPEG
Default File Format	PDF
Resolution	75, 100, 150, 200, 300, 400, 600 dpi
Default Resolution	
B&W	200 dpi
Gray/Color	150 dpi
Max. Number of Profiles	20

3. UNPACKING, INSTALLATION, AND TRANSPORTATION

3.1 Precautions of Installation
3.2 Unpacking Procedure
3.3 Installation
3.4 Placing the Original
3.5 Transportation

3.1 PRECAUTIONS OF INSTALLATION

Pay attention to the following matters before unpacking and installation.

- Do not install in a place where vibration may occur.
- Keep the C5510MFP/C5530MFP out of direct sunlight. Do not install near a heat source.
- Do not place the C5510MFP/C5530MFP around materials which shut off the circulation of air.
- Do not install in a humid or dusty place.
- Use care not to scratch the glass surface of the C5510MFP/C5530MFP or the document holding pad with a clip or staple.
- Do not use the wall socket with connecting devices which may generate noise, for example, air-conditioner, etc.
- Only use the AC adapter (model name ADP-50ZB made by Delta Electronics, Inc.) included with the machine. Using other AC adapters may damage the machine and void the warranty.
- Use a suitable AC power source.
- Place the C5510MFP/C5530MFP on a level surface.

3.2 UNPACKING PROCEDURE

Unpack the C5510MFP/C5530MFP according to the following procedure.

- Remove the packing material.
- Remove the C5510MFP/C5530MFP from the shipping container.
- Remove the C5510MFP/C5530MFP from the PVC bag.
- Check the items against the following illustration.
- For any missing items, please contact the nearest dealer or distributor.

Note: Keep all the packing material in case you may need to return the C5510MFP/C5530MFP.

C5510MFP/C5530MFP main unit

Paper feed tray and paper support

Two pieces of USB cables

Power adaptor and power cord

Paper stopper

Software CD/Electronic user's manual

ADF pad

3.3 INSTALLATION

3.3.1 UNLOCKING THE SCAN UNIT

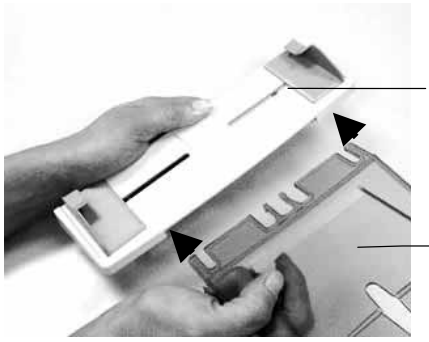
The scan unit is locked during transport to protect scanning mechanism from being damaged. *Be sure to unlock the scan unit before using the machine.*

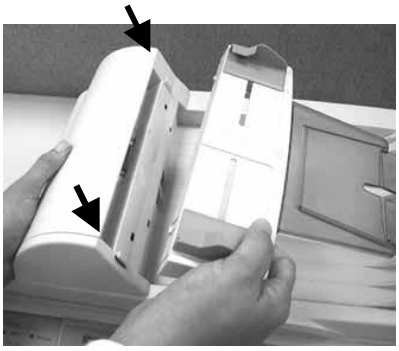
1. Locate the lock switch underneath the machine.

2. Move the lock switch to the **"unlocked position"**.

3.3.2 INSTALLING THE PAPER FEED TRAY

1. Attach the Paper Support to the Paper Feed Tray.
2. Then, attach the Paper Feed Tray to the machine.





3.3.3 CONNECTING THE ETHERNET CABLE

1. Connect one end of your Ethernet LAN cable to an available port of your Ethernet Hub.

2. Connect the other end to the network port at the back of the C5510MFP/C5530MFP.

3.3.4 CONNECTING THE PRINTER CABLE

1. Connect one end of the printer cable (not included) to your printer.

2. Connect the other end to the printer port of your C5510MFP/C5530MFP.

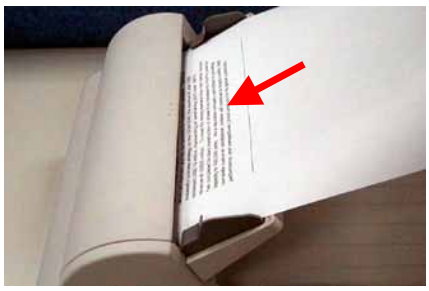
3.3.5 CONNECTING THE ADF CABLE

Connect the ADF (Auto Document Feeder) cable (attached to the document(s) cover) to the ADF port at the back of the C5510MFP/C5530MFP.

3.3.6 PLACING YOUR DOCUMENT(S) IN THE ADF

1. Make sure your document is free of staples, paper clips and is not worn.
2. If you have multiple pages, fan your document(s) to avoid occasional paper jam. The ADF can hold up to 25-page document at one time.

3. Place your document(s) with your text **FACE UP** in the ADF and assure top of the pages feed in first.



4. Adjust the Paper Guides to center the document(s) in the ADF.

3.3.7 PLACING YOUR DOCUMENT(S) ON THE GLASS

1. Open document(s) cover to reveal the glass.
2. Place your document(s) with the text **FACE DOWN** on the glass and align the document(s) in the upper-right corner of the glass.

3. Close the document cover.

3.4 TRANSPORTATION

To move the C5510MFP/C5530MFP from where it is installed, for repair or any other reason, make sure to observe the following conditions:

(1) Turn off the power of the C5510MFP/C5530MFP.

If the scanning head is located at a place other than front of the glass, turn the C5510MFP/C5530MFP on to return the scanning head to the front of the glass. After the scanning head is returned to the home position, turn the power supply off.

(2) Move the lock switch to the "locked position".

(3) Remove the power and printer cables.

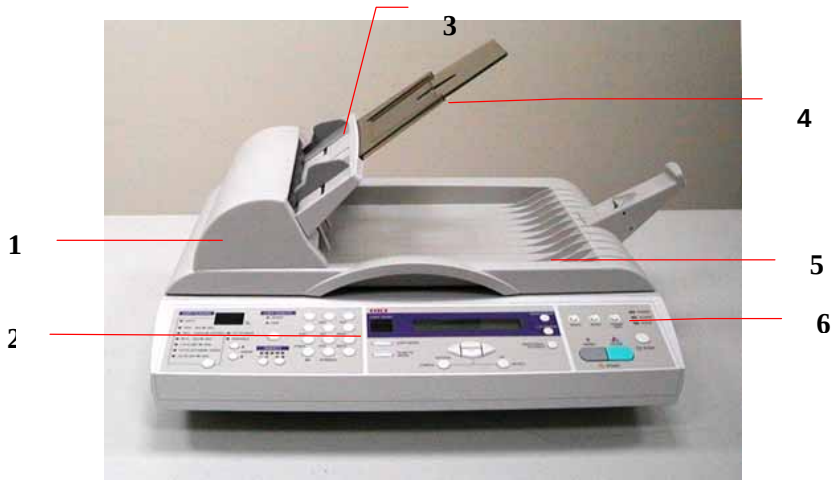
(4) Put the C5510MFP/C5530MFP in the packing case with the packing material.

4. PARTS IDENTIFICATION

4.1 External View

4.1 EXTERNAL VIEW

4.1.1 FRONT VIEW



1. ADF unit
2. LCD-display
3. ADF Paper Tray
4. ADF Paper Support
5. Document(s) Cover
6. Control Panel

4.1.2 REAR VIEW

1.	ADF Unit:	To load multi-page document.
2.	ADF Cable:	To connect the main unit.
3.	Power Switch	To turn on or off the machine.
4.	Power Jack	To connect a power cable.
5.	ADF Connector	To connect ADF cable.
6.	USB Connector	To connect a personal computer with USB interface.
7.	LAN connector	To connect an ethernet cable.
8.	Copy connector	To connect a C5510/C5530.

4.1.3 CONTROL PANEL

*Panel A

Part A **Part B** **Part C**

*Panel B

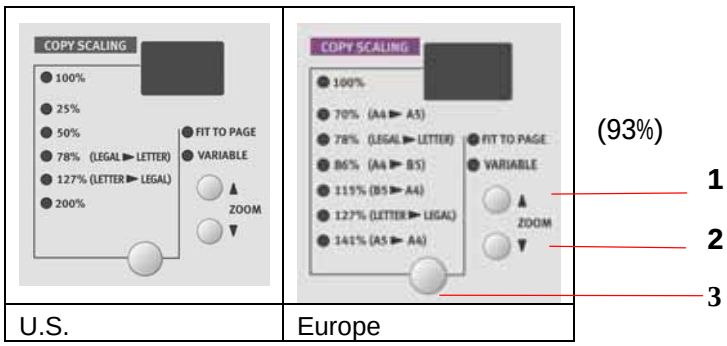
Part A **Part B** **Part C**

*Panel A is used in the United States.

*Panel B is used in Europe.

Part A: Copy Area

Scaling Area： Used to reduce document down to 25% or enlarge it up to 400%.



U.S. Europe

1. Increase scaling in 1% increment up to 400%
2. Decrease scaling in 1% Decrement down to 25%
3. Select scaling from the preset percentages

US

Europe

Used to choose copy quality.

US

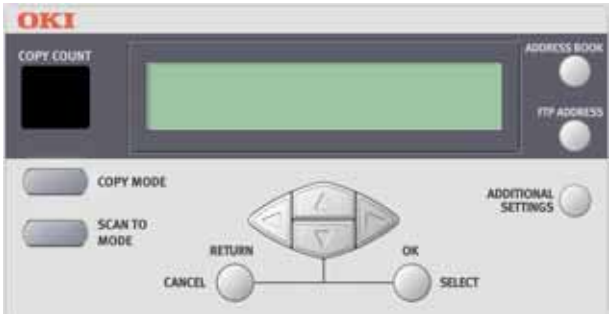
Europe

Used to change the density level.

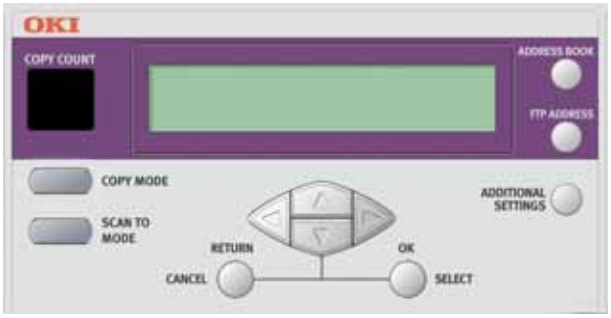
Used to enter copy count or e-mail address.

Part B: LCD-display & Function Keys:

Used to display current operation and select working mode.



(U.S. style)



(Europe style)

Function Keys and others:

	Used to indicate the number of copies.
	Used to choose the copy mode. (also the default working mode)
	Used to choose the Scan to e-mail, or Scan to Server mode.
	Used to execute the additional settings of “copy” and “Scan to” mode. (The settings are available only for three minutes. After three minutes, the settings will return to default value.)
	Used to move the cursor up/down/left/right in the LCD. The up/down keys can be used to switch the indication of the function. The left key can be used to return to the upper level of the setting. The right key can be used to go to the lower level of the setting.
	Used to select and confirm current selections for the settings.
	Used to cancel selections and go back to upper level of the setting. The key is also used to cancel previous input.
	Used to indicate the existing FTP address for “Scan to” function. This key is only available in “Scan to” mode.
	Used to indicate the existing E-mail address for “Scan to” function. This key is only available in “Scan to” mode.

Part C: Start & Other Keys:

Used to select special requirement or the start key to send or copy your document(s).

	Used to set up the printer and the scanner.
	Used to change scanner setting to factory default value.
	Used to go to sleep mode immediately. (A continuous press is invalid)
	Power LED indicates power on and ready status. Alarm LED indicates error status. Sleep LED indicates power saving status.
	Used to send or copy the document(s) in black and white.
	Used to send or copy the document(s) in colors.
	Used to stop every operation (LCD indication shifts to stand-by screen of each function) but not effect all settings.

5. THEORY OF OPERATION

5.1 INTRODUCTION

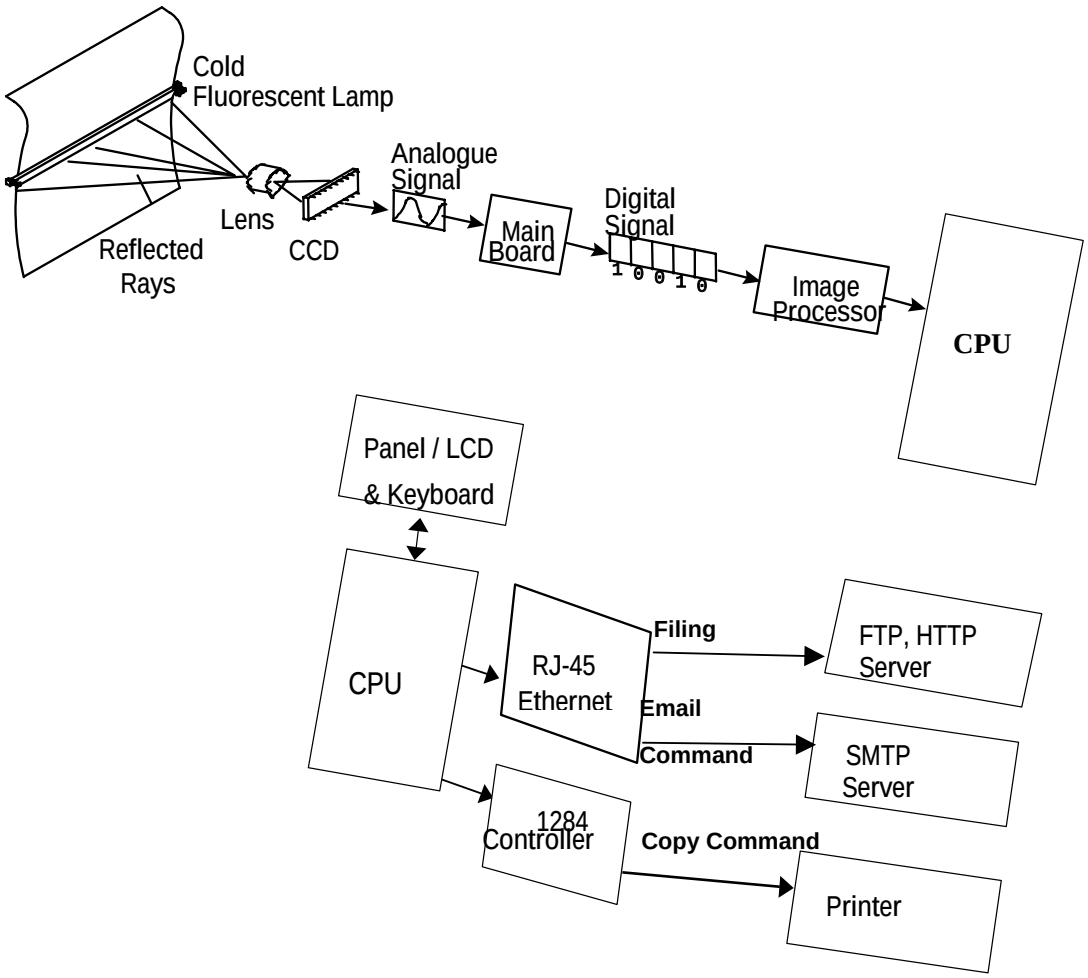


Figure 5.1 Theory of Operation

The reflected rays of your original as shown in the above Figure 5.1 pass through the lens and creates an image on the CCD (Charged Coupled Device). Then, according to the different light intensity perceived by the CCD, the CCD will transfer these data into a series of analog signals to the main board, where the signals are turned into digital signals. These digital signals flow to the image processor and store into the CPU (Central Processing Unit). Through the commands from the Control Panel, the digital signals may go to 1284 Controller to send copy command to printer ,or to RJ-45 to send filing command to FTP/HTTP server or to send email command to SMTP server .

5.2 MAIN CONTROL UNIT

5.2.1 SYSTEM DIAGRAM

Figure 5.2 shows the system block diagram.

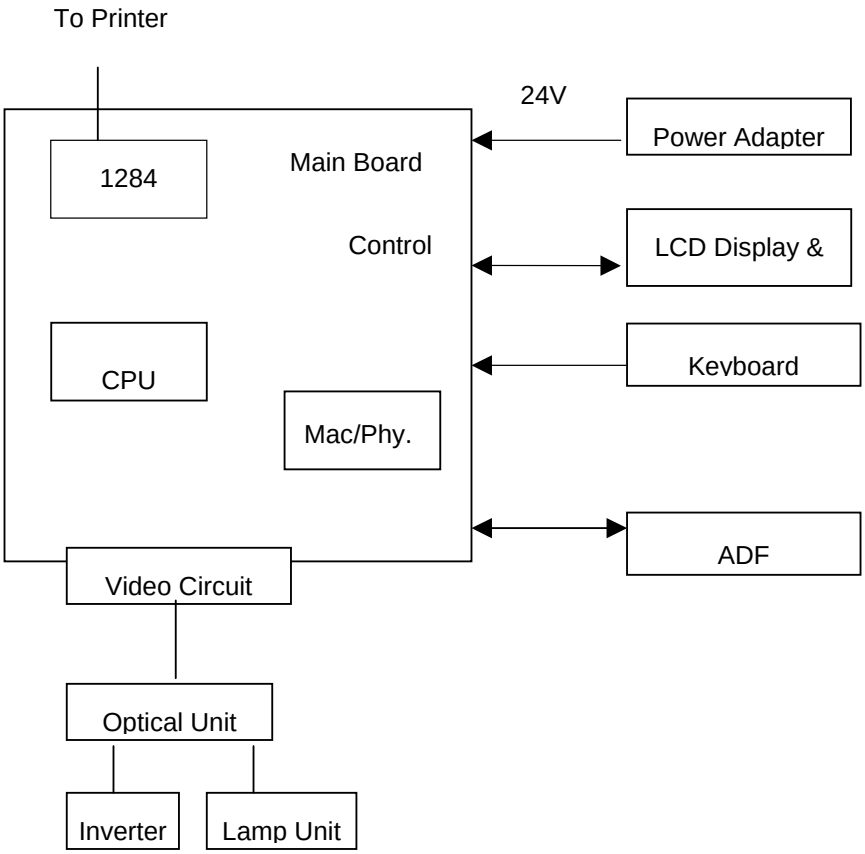


Figure 5.2 System block diagram

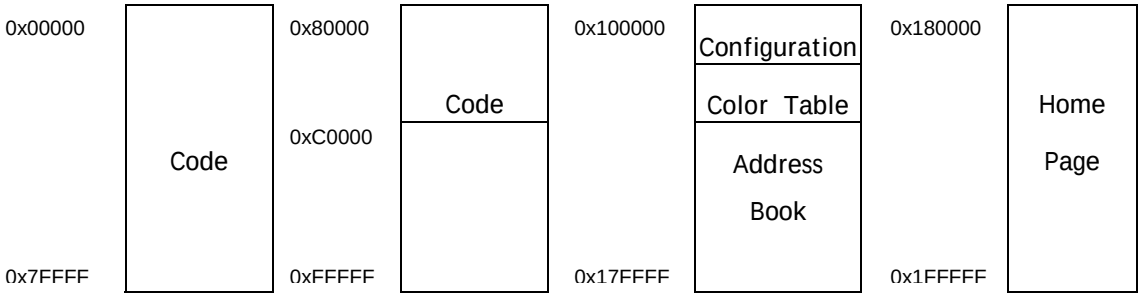
5.2.2 MAIN CONTROL CIRCUIT

This C5510MFP/C5530MFP is controlled by RISC CPU. The CPU is configured with a 2MB external ROM program area, a 8MB external RAM work area, 2 timer / counters, 3 external interrupts.

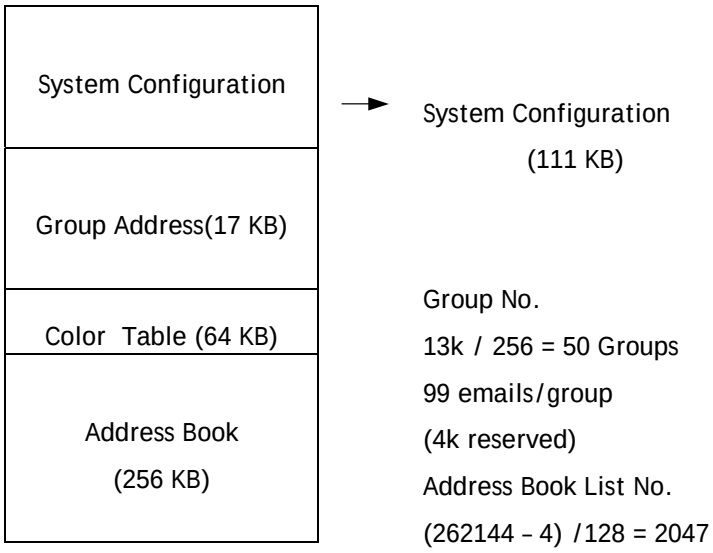
I/O Address Maps:

ROM Area:

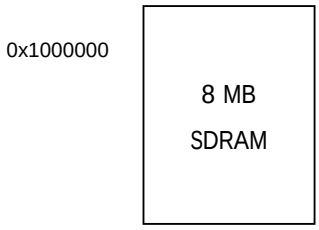
Flash Layout



Address Book ROM Layout



- External RAM Working Area:



- External I/O

External I/O	I/O Map	External Interrupt
Keyboard	0x760C000 ~ 0x760C001	Ext. Interrupt 3
Keypad	0x760C000 ~ 0x760C001	X
LCD	0x760C002 & 0x760C082	X
LED	0x760C003	X
JPEG	0x7604000 ~ 0x7607FFF	Ext. Interrupt 1
Z1	0x7600000 & 0x7603FFF	Ext. Interrupt 0
01	0x7608000 & 0x760BFFF	X

5.2.3 VIDEO CIRCUIT:

The video circuit of this C5510MFP/C5530MFP includes: 1. CCD driving circuit and motor control signal 2. CCD signal processing circuit.

1. CCD Driving Circuit & Motor Control Signal

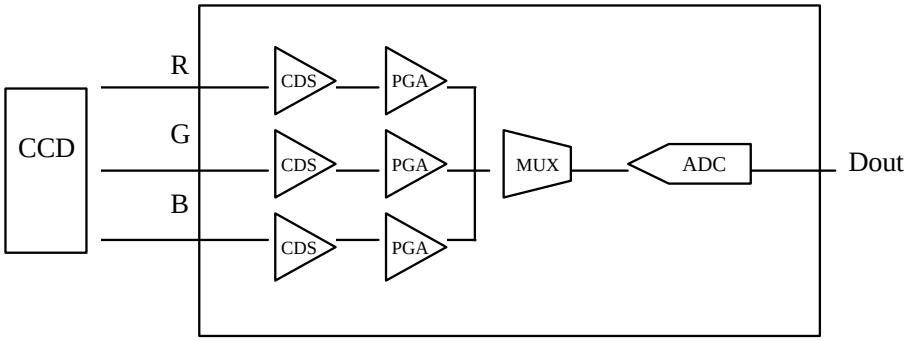
The CCD driving circuit is used to generate correct signals to the CCD, so that the CCD may generate the correct image data.

Signal for CCD:

Pin Assignment for CCD cable

Pin No.	Name	Function
1	/MI01	Motor Control Signal
2	/MI02	Motor Control Signal
3	/MI11	Motor Control Signal
4	/MI12	Motor Control Signal
5	+24V	Motor Power Supply
6	+24V	Motor Power Supply
7	MGND	Motor Ground
8	MGND	Motor Ground
9	MPH1	Motor Phase One
10	MPH2	Motor Phase One
11	SH	SHIFT Gate
12	D.G.	Digital Ground
13	RS	CCD Reset Gate
14	CP	Clamp Gate
15	PHI1-	CCD Clock Phase
16	PHI2-	CCD Clock Phase
17	D.G.	Digital Ground
18	+12V	CCD Power Supply
19	VOR	CCD Red Channel Output Signal
20	A.G.	Analog Ground
21	VOG	CCD Green Channel Output Signal
22	A.G.	Analog Ground
23	VOB	CCD Blue Channel Output Signal
24	A.G.	Analog Ground
25	/HMSEN	Home Sensor
26	CCDVCC	CCD Power Supply
27	I.G.	Inverter Ground
28	I.G.	Inverter Ground
29	I.P.	Inverter Power
30	I.P.	Inverter Power

2. CCD signal processing circuit



CCD Signal Processor

The CCD signal processor includes all the necessary circuitry to perform three-channel conditioning and sampling. The signal chain consists of three-channel correlated double sampling (CDS) and programmable gain adjustment of the CCD output (PGA) is a 12 bit analog to digital connector (ADC) quantizes the analog signal.

* PGA: Programmable gain amplifier

5.2.4 PANEL AND LCD MODULE CIRCUIT

The circuit for Panel and LCD module controls the function of the entire module including the LCD Display, the push button on the Control Panel, and LED display.

Pin assignment of LCD module

Pin No.	Name	Function
1	D.G.	Digital Ground
2	KPDATA0	Data Bus bit 0
3	KPDATA1	Data Bus bit 1
4	D.G	Digital Ground
5	KPDATA2	Data Bus bit 2
6	KPDATA3	Data Bus bit 3
7	D.G.	Digital Ground
8	KPDATA4	Data Bus bit 4
9	KPDATA5	Data Bus bit 5
10	D.G.	Digital Ground
11	KPDATA6	Data Bus bit 6
12	KPDATA7	Data Bus bit 7
13	D.G.	Digital Ground
14	VCC	Digital Power Supply
15	VCC	Digital Power Supply
16	VCC	Digital Power Supply
17	VCC	Digital Power Supply
18	D.G.	Digital Ground
19	D.G.	Digital Ground
20	LCDA0	LCD Address 0
21	KPnECS	Panel Chip Select
22	KPnWE	Panel Write Enable
23	KPnOE	Panel Output Enable
24	/KBRD	Scan Key Read Chip Select
25	/KBWR	Scan key Write Chip Select
26	/LCDCS	LCD Module Chip Select
27	/LED0	LED Chip Select 0
28	/LED1	LED Chip Select 1
29	/LED2	LED Chip Select 2
30	D.G.	Digital Ground
31	- 8V	LCD Driver Power
32	/RESET	LCD Reset Signal

5.2.5 MODEM INTERFACE

Pin No.	Name	Function
1	D.G.	Digital Ground
2	D.G.	Digital Ground
3	D.G.	Digital Ground
4	D.G	Digital Ground
5	N.C.	No Connection
6	N.C.	No Connection
7	VCC	Digital Power Supply
8	VCC	Digital Power Supply
9	/RISCRST	Modem Reset
10	N.C.	No Connection
11	RI	Ring Input
12	N.C.	No Connection
13	DCD	Data Carrier Detect
14	UARXD0	UART Receive Data
15	UATXD0	UART Transmit Data
16	/UADTR0	Data Terminal Ready
17	RTS	Request to Send
18	CTS	Clear to Send
19	N.C.	No Connection
20	/UADSR0	Data Set Ready
21	N.C.	No Connection
22	N.C.	No Connection
23	24VM	+24V
24	SPEAKER+	Speaker +
25	H24G	24 V Ground
26	SPEAKER-	Speaker -
27	N.C.	No Connection
28	N.C.	No Connection
29	N.C.	No Connection
30	N.C.	No Connection
31	D.G.	Digital Ground
32	D.G.	Digital Ground
33	D.G.	Digital Ground
34	D.G.	Digital Ground

5.2.6 SENSOR INPUT

The sensor input includes home position sensor.

Home position sensor

The home position of the carrier motor is detected by photo sensor. The photo transistor transmission to the photo sensor receiver circuit is shown below .

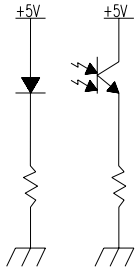
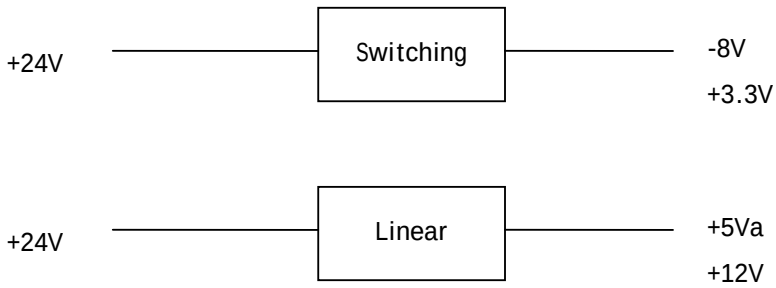


Figure 5.3 Home position sensor

The home position is detected when the carrier passes between the LED and the photo transistor.

5.2.7 SUB POWER SUPPLY CIRCUIT

The sub power supply circuit is provided for the internal analog circuit. Input is 12V and output is Vcc and +5Va. The circuit configuration is shown below:



The sub power supply is used for: A/D, and logic circuits.

5.2.8 POWER SUPPLY

In this system, there is only one type of power supply. Please see Table 5.1 for details.

Table 5.1 Power Adapter

Type / Characteristic	Wall-mount
Input voltage range	100-240V
Input current (max.)	2.0A
Input frequency	50-60Hz
Max. in-rush current(@115VAC, cold start)	4A
Output voltage	+24Vdc
Min. load current	0.7A
Max. load current	0.9A
Total Power	22W

6. TROUBLESHOOTING

6.1 Troubleshooting Flowchart
6.2 Tables

This section is given to locate and resolve the causes of troubles so as the C5510MFP/C5530MFP is always in good working condition. The trouble modes, relevant units and maintenance methods are described below.

When a problem occurs, troubleshoot the problem according to the symptoms it shows.

Check the following first:

1. Is anything operated improperly?
2. Does the problem recur, or is it regular?

Figure 6.1 to Figure 6.3 show the troubleshooting flowcharts.

The causes and maintenance methods for each failure mode are described in Table 6.1 through 6.7

6.1 TROUBLESHOOTING FLOWCHART

6.1.1 POWER ON TO C5510MFP/C5530MFP READY

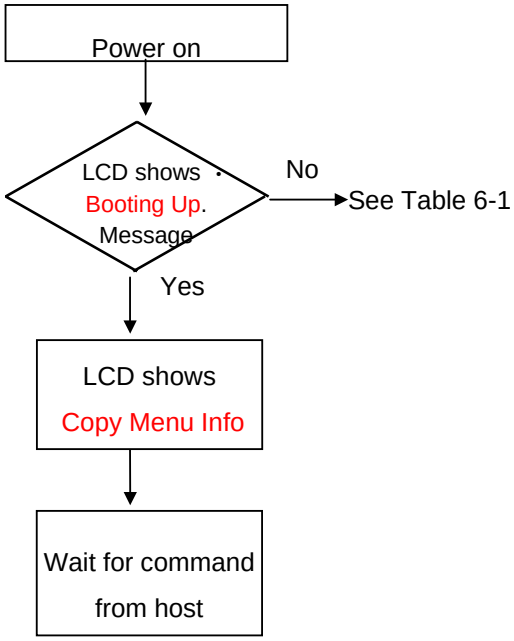


Figure 6.1 Power on to C5510MFP/C5530MFP ready

6.1.2 COPY OPERATION

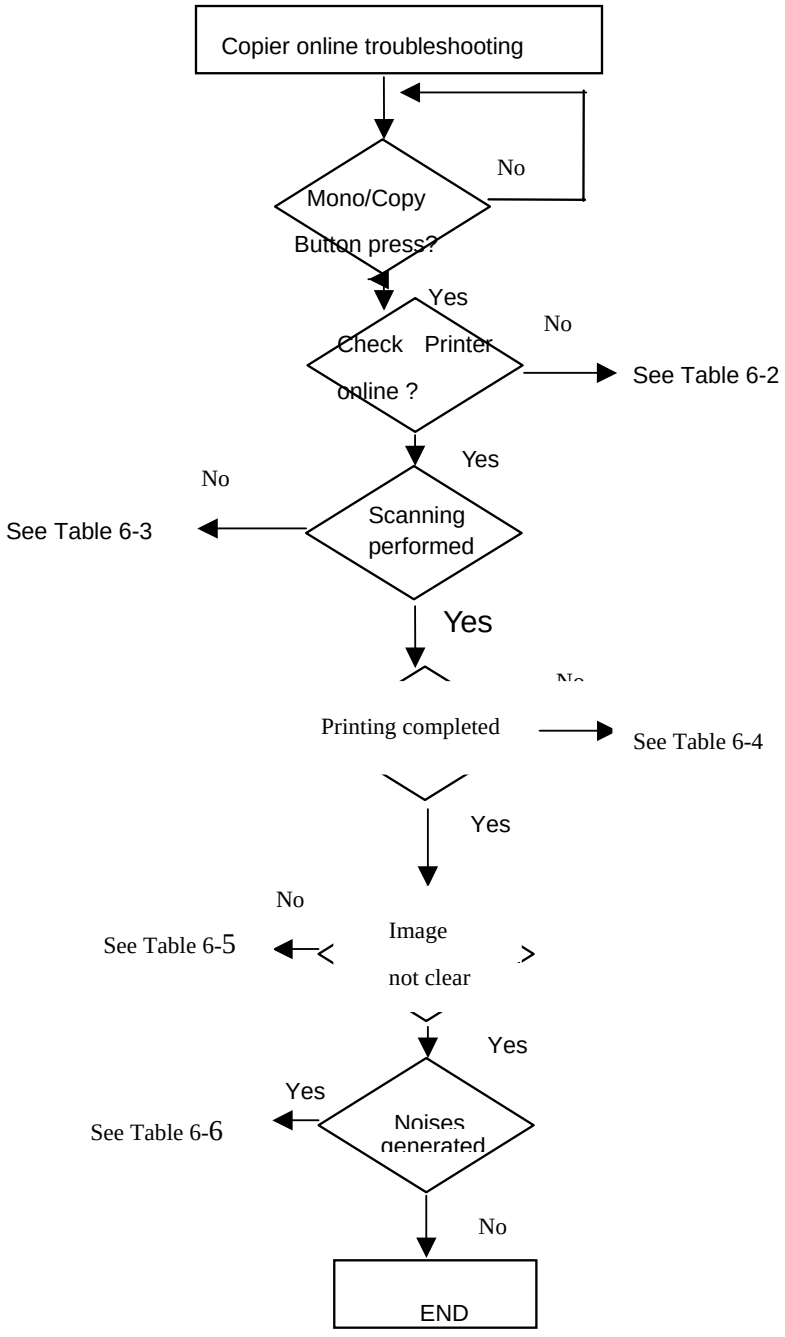


Figure 6.2 Copy operation flow

6.1.3 EMAIL OPERATION

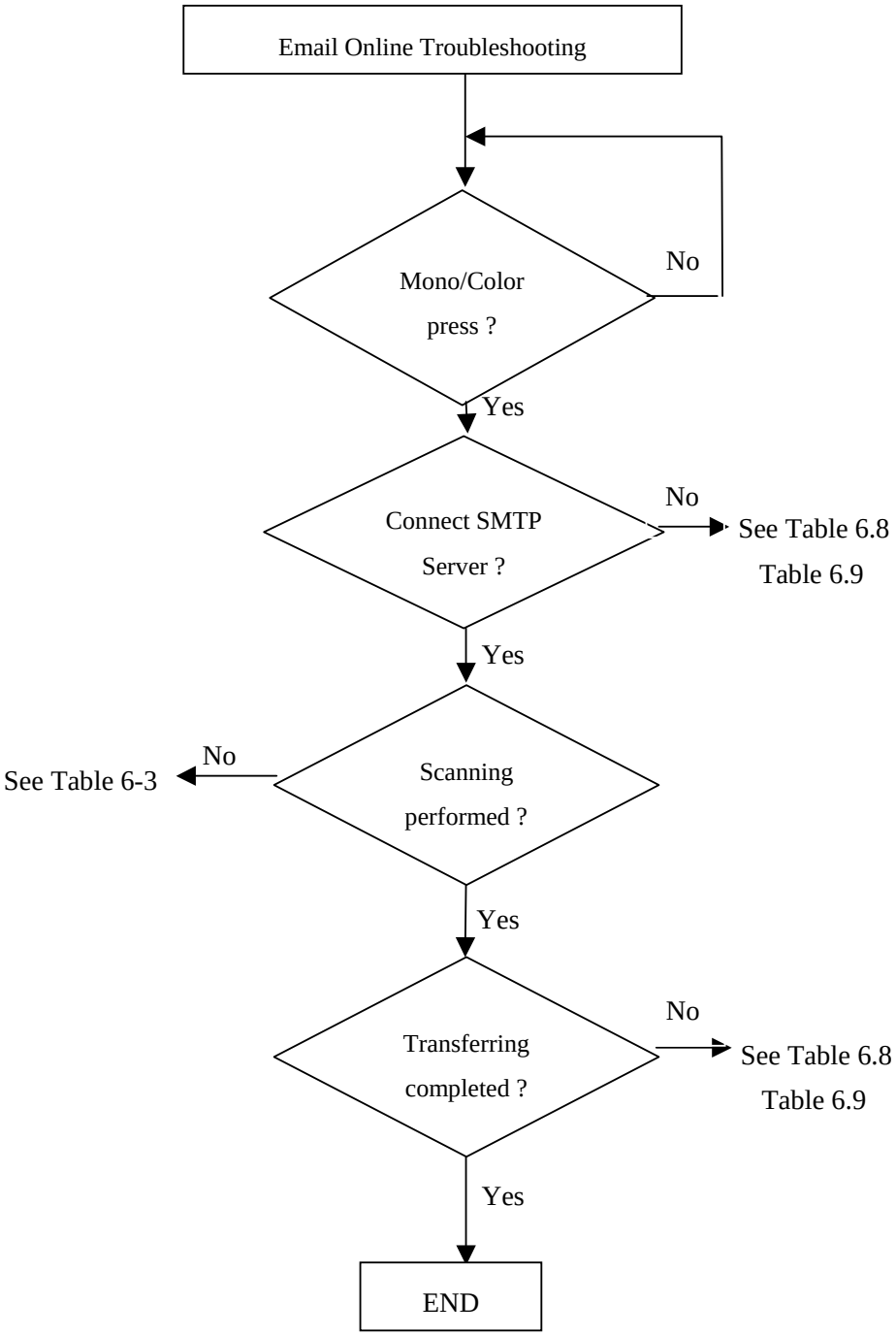


Figure 6.3 Email operation flowchart

6.1.4 CONTORL PANEL OPERATION

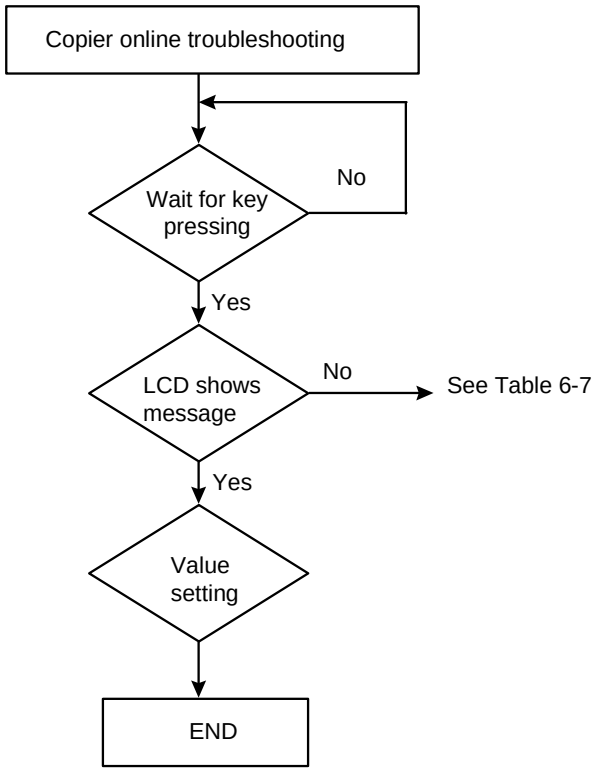


Figure 6.6 Control panel operation

6.2 TABLES

The following tables provide detailed troubleshooting information.

Table 6.1	The LCD does not display.
Table 6.2	Printer does not react.
Table 6.3	Optical path dirty or hardware problem.
Table 6.4	Printer does not print.
Table 6.5	Image not clear.
Table 6.6	Noise generated.
Table 6.7	LCD does not show message after command.
Table 6.8	C5510MFP/C5530MFP is not connected to the network
Table 6.9	C5510MFP/C5530MFP cannot send email

6.2.1 LCD DOES NOT DISPLAY

Table 6.1

Cause	Relevant Unit	Check Method	Maintenance Method
Unplugged from outlet	None	Visual check	Insert the AC plug into the outlet
DC power unplugged from unit	None	Visual check	Insert the DC power adapter cable into the unit
AC voltage failure	None	AC outlet voltage check	None
Power adapter output voltage failure	Power unit	Output voltage (+24v) check	Replace the power unit
PCB failure	Main control PCB	Tester check (+24V, GND)	Remove the cause or replace the PCB
LCD module main board connection failure	LCD module main board	Visual check	Plug the connector and secure it firmly

6.2.2 PRINTER DOES NOT REACT

Table 6.2

Cause	Relevant Unit	Check Method	Maintenance Method
Printer cable failure	Printer cable	Visual check	Secure printer cable firmly or replace the printer cable
Printer link failure	Main PCB	Visual check	Replace the PCB
	Printer paper jam	Visual check	Remove paper
	Printer paper empty	Visual check	Insert paper
	Printer problem	Visual check	See printer manual
	Printer busy	Visual check	Wait till printer ready

6.2.3 SCANNING IS NOT PERFORMED

Table 6.3

Cause	Relevant Unit	Check Method	Maintenance Method
Scanner cable failure	Scanner cable	Visual check	Attach the scanner cable
Scanner link failure	Main PCB	Visual check	Replace the PCB
	Scan Module		Replace the Scan Module

6.2.4 PRINTER DOES NOT PRINT

Table 6-4

Cause	Relevant Unit	Check Method	Maintenance Method
Printer select wrong	Printer	Visual check	Make sure the printer information on the LCD display is correct.
Paper size incorrect	Paper tray	Visual check	Replace paper tray (The paper size being selected is inconsistent between the printer & the C5510MFP/C5530MFP).
Printer problem		Visual check	Check printer

6.2.5 IMAGE UNCLEAR

Table 6-5

Cause	Relevant Unit	Check Method	Maintenance Method
Lamp too dark	Lamp	Visual check	Replace the lamp
Dirt on flatbed glass	Flatbed glass	Visual check	Clean the flatbed glass with isopropyl alcohol
Printer toner low	Printer toner	Visual check	Check printer toner or replace the toner
Printer memory not enough	Printer	Visual check	Add printer memory

6.2.6 NOISE GENERATED

Table 6-6

Cause	Relevant Unit	Check Method	Maintenance Method
Motor unit failure	Motor unit	Replace the motor unit	Replace the motor
Main control PCB failure	Main control PCB	Replace the main control PCB	Replace the main control PCB
Scanning module failure	Scanning module	Check scanning module shakiness	Replace the scanning module
Dirt on rail	None	Visual check	Clean the rail with oil

6.2.7 LCD DOES NOT SHOW MESSAGE AFTER COMMAND

Table 6-7

Cause	Maintenance method
LCD module cable failure	Attach the LCD module cable and secure it firmly
LCD problem	Replace the LCD module
Push button failure	Replace the LCD module

6.2.8 C5510MFP/C5530MFP IS NOT CONNECTED TO THE NETWORK

Table 6.8

Cause	Maintenance Method
RJ-45 connector is not plugged in	Plug the connector in
Network cable is damaged	Replace a good one
IP address is invalid	Ask MIS for a valid address
Subnet Mask is invalid	Ask MIS for a valid value
Gateway IP is invalid	Ask MIS for a valid address

6.2.9 C5510MFP/C5530MFP CANNOT SEND EMAIL

Table 6.9

Cause	Maintenance Method
SMTP server IP is wrong	Ask MIS for a correct SMTP server address
"From" address is wrong	Check "From" email account
"To" address is wrong	Check "To" email address
Other causes	Please refer to the following error code table

INFORMATION CODES DURING SCANNING AND COPYING

Info code	Meaning	Action
10001	SRAM error	Restart your C5510MFP/C5530MFP. (Turn off and on again.) If the code still appears, contact your dealer.
10002	DRAM error	Restart your C5510MFP/C5530MFP. If the code still appears, contact your dealer.
10003, 10004	Lamp error	Restart your C5510MFP/C5530MFP. If the code still appears, contact your dealer.
10005	Home sensor error	Restart your C5510MFP/C5530MFP. If the code still appears, contact your dealer.
10006	Lamp error	Restart your C5510MFP/C5530MFP. If the code still appears, contact your dealer.
10007	Lock error	1. Turn off your C5510MFP/C5530MFP. 2. Find the lock switch underneath the machine and unlock the machine. 3. Restart your C5510MFP/C5530MFP. If the code still appears, contact your dealer.
10008, 10009	ADF error.	ADF paper jam. Open the ADF cover and remove the paper from the ADF. If the code still appears, contact your dealer.
10201	Z1 access error	Restart your C5510MFP/C5530MFP. If the code still appears, contact your dealer
10202	Z1 SRAM error	Restart your C5510MFP/C5530MFP. If the code still appears, contact your dealer

MESSAGE DURING SCANNING AND COPYING

LCD Message	Action
Copy function disables.	Please download the printer profile.
Check printer cable or status.	1. Check if the printer cable has been correctly connected. 2. Check if the printer is turned on. 3. Restart the C5510MFP/C5530MFP and your printer. 4. If the message still appears, contact your dealer.

INFORMATION CODES DURING NETWORKING

Info Code	Meaning	Action
20512	The connection failed.	Ping the C5510MFP/C5530MFP from another PC. If the C5510MFP/C5530MFP has no response, then perform the following steps. 1.Check if the RJ-45 connector is firmly plugged-in. 2.Check the Ethernet cable. 3.Check the C5510MFP/C5530MFP IP address. 4.Check the destination IP address. 5.Check Subnet Mask. 6.Check Gateway IP.
20519	The destination address is invalid.	
20530	Network is down.	
20531	Network is unreachable.	
20533	The connection aborted by the server.	
20534	The connection reset by the server.	
20540	Connection timed out	
20541	The attempt to connect failed.	
20545	The destination host is not able to reach.	

INFORMATION CODES DURING E-MAILING

Info Code	Meaning	Action
30421 31421 32421	Service not available, closing transmission channel. The Server is going to shut down.	Contact the network administrator.
31450	Requested mail action not taken: mailbox unavailable	Check the "To" address.
31451 32451	Requested action aborted: local error in processing	Contact the network administrator.
31452 32452	Requested action not taken: insufficient system storage	Contact the network administrator.
30500 31500 32500 33500	Syntax error, command unrecognized	Reboot the machine, and try again. If the error still appears, contact your dealer.
30501 31501	Syntax error in parameters or arguments	1. Check if the Device Name is valid. The Device Name can be found by pressing the "Menu" button and choose the "General" item. 2. Check the "From" address. 3. Check the "To" address. 4. Contact the network administrator.
31503 32503	Bad sequence of commands	Restart the machine, and try later. If the error still appears, contact your dealer.
30504	Command parameters not implemented	Check if the Device Name is valid. The Device Name can be found by pressing the "Menu" button and choose the "General" item.
31550	Requested action not taken: mailbox unavailable [E.g., mailbox not found, no access]	Check the "To" address.
31551	User not local: please try again.	Check the "To" address.
31552	Requested mail action aborted: exceeded storage allocation	1. Check the "From" address. 2. Check the "To" address. 3. Contact the network administrator..
31553	Requested action not taken: mailbox name not allowed	Check the "To" address.
32554	Transaction failed	Contact the network administrator.

Information Codes During Filing

Info Code	Meaning	Action
41530	FTP password incorrect	Check password in folder and try again.
41421 42421 43421 44421	FTP Service not available	Make sure the FTP server is not shut downing. If the error is still there, contact your system administrator.
42530	FTP login fail	Check Server UID and password in folder and try again.
43550	FTP can't enter this directory	Make sure your have privilege to enter this directory.
44450	FTP File unavailable	Other user accesses the file you want to override.
44452	FTP server storage insufficient	Check FTP server free storage space and contact your system administrator.
44553	FTP file action not taken.	Make sure you have privilege to write file or to create subdirectory in that directory.
57600	CIFS fail to connect	Check that server supports CIFS(SMB) connection.
57601	CIFS Network share name incorrect.	Check directory in folder and make sure it follows UNC, like \\Computer\Share\directory.
57610	CIFS Login Fail	Check user name and password for this folder.
57620	CIFS dialect negotiation fail	This CIFS may not support PC NETWORK PROGRAM 1.0 dialect.
57710	CIFS fail to create file.	Make sure you have full control privilege on this network share.
58100	HTTP fail to connect	Check whether that server supports HTTP connection.
58200	HTTP fail to put file	That server may not support HTTP 1.1 PUT command or you haven't privilege to put file on that directory, contact your system administrator for help.

7. PREVENTIVE MAINTENANCE

7.1 Cleaning the Document Glass
7.2 Cleaning the ADF
7.3 Clearing a Paper Jam
7.4 Replacing the ADF Pad

This C5510MFP/C5530MFP is designed to be free of maintenance. However, it is suggested to perform preventative maintenance in the shorter term either every 6 months or every 60,000 sheets scanning to ensure a consistently optimum performance.

7.1 CLEANING THE DOCUMENT GLASS

There are times when the document cover and document glass is contaminated with ink, toner particles or paper coatings. In this case, the C5510MFP/C5530MFP will have to be cleaned frequently to ensure the best performance.

Follow the cleaning procedure as below:

(1) Open the document cover.

(2) Dip a clean cloth with non-corrosion solvent like alcohol (purity above 99.5%).

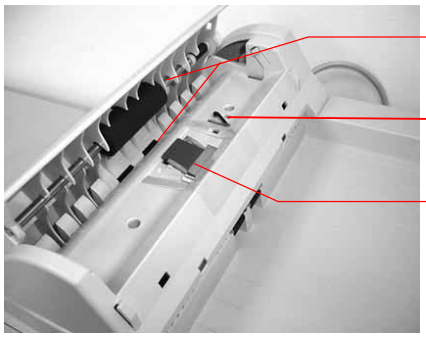
(3) Wipe the document cover and the document glass gently as shown the following figure. Continue until the entire document cover and document glass are cleaned and observe that no cleanser remains on the surface.

(4) Close the document cover. Your C5510MFP/C5530MFP is now ready for use.

7.2 CLEANING THE ADF

From time to time the pad assembly and feeding rollers may become contaminated with ink, toner particles or paper dust. In this case, the machine may not feed documents smoothly. If this occurs please follow the cleaning procedures to return your machine to its original state.

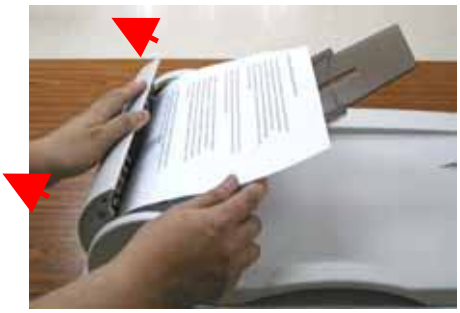
1. Moisten a cotton swab with isoprophyl alcohol (95%).
2. Gently open the ADF front cover. Wipe the feeding rollers by moving the swab from side to side. Rotate the rollers forward with your finger and repeat the above cleaning procedures until the rollers are clean. Be careful not to snag or damage the pick springs.
3. Wipe the pad in the direction from top to bottom. Be careful not to hook the pick springs.
4. Close the ADF unit. Your machine is now ready to use.

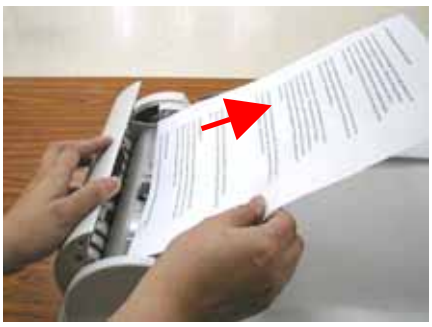


7.3 CLEANING THE ADF

In the event of a paper jam, follow the procedures below to remove the paper:

1. Gently open the ADF front cover to the left.
2. Carefully pull the paper out of the ADF unit.
3. Close the ADF front cover. Your C5510MFP/C5530MFP is now ready to use.





7.4 REPLACING THE ADF PAD

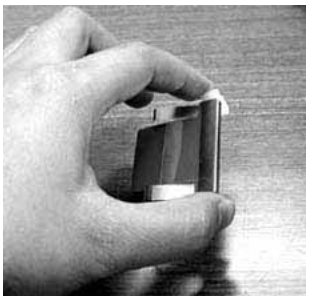
After scanning approximately 100,000 pages through the ADF, the pad module may be worn out and you may experience problems with document feeding. In this case, it is highly recommended to replace the pad module with a new one. For ordering the pad module, please consult your nearest dealer and follow the procedure below to replace it.

Disassembling Procedure

1. Pull the Paper Jam Release button.
2. Open the ADF front cover to the left.
3. Press both sides of the ADF snap-in pad module inwardly with your fingers to pull out the ADF snap-in pad module.

Assembling Procedure

1. Take out the ADF pad module from the box.
2. Press both arms of the ADF pad module inwardly with your two fingers
3. Place it into the holes until it snaps into place.



8. DISASSEMBLY

8.1 Service Tools
8.2 Lubricants
8.3 Procedure for Disassembly and Reassembly

8.1 SERVICE TOOLS

Table 7.1 describes the maintenance tools necessary for the maintenance of this equipment.

No.	Name	Description
1	Minus screwdriver	Idler pulley module screw
2	Philips screwdriver (magnetic)	Nominal No.2 M3, M4
3	Oil	Shell “Terrace Oil 46”
4	Grease	Shell ”Alvania Grease No.2”
5	Alcohol (Isopropyl 91% >)	Cleaning
6	Digital voltmeter	With 0.01 V range
7	Oscilloscope	100 MHz or more with external sweep
8	Blower	Cleaning

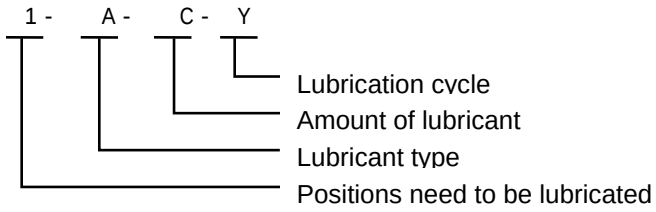
Table 8.1 Maintenance tools

8.2 LUBRICANTS

This section describes the items to check and the places to lubricate when maintenance parts are replaced.

8.2.1 MECHANICAL UNIT LUBRICATION

This lubrication method:



1. Positions need to be lubricated:
   The positions need to be lubricated is indicated in numbers.
2. Lubricant type:
   A: Shell Alvania Grease No. 2
   B: Shell Terrace Oil 46
3. Amount of lubricant:
   C: Coat thinly uniformly
4. Lubrication cycle:
   Y: Every year

Table 8.2 below shows the position to be lubricated.

Lubrication Position	Lubricant Type	Lubricant Amount	Lubrication Cycle	Lubrication Position
1	B	C	Y	Sliding Rod
2	A	C	Y	Sliding Frame

Table 8.2

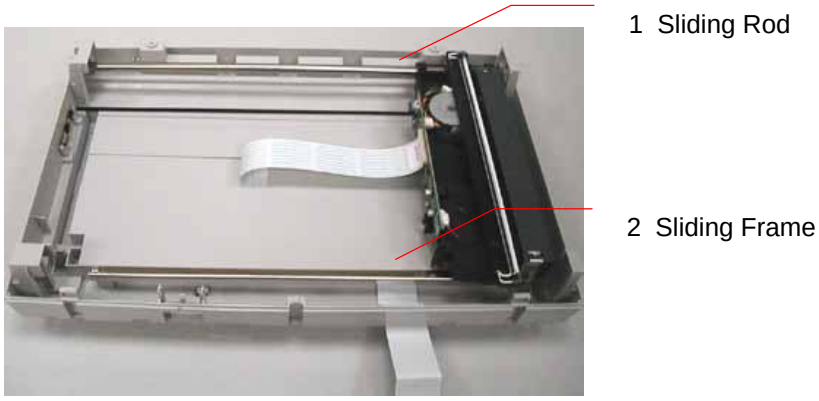


Figure 8.1 Positions need to be lubricated

8.3 PROCEDURE FOR DISASSEMBLY AND REASSEMBLY

8.3.1 NOTES ON DISASSEMBLY

(1) Clean the disassembly and assembly location.

(2) Disconnect the power cable and remove the AC plug from the outlet before disassembly and assembly.

(3) Follow the disassembly and assembly procedures. Never loosen the screws of parts that must not be disassembled.

(4) Store the disassembled parts in a clean place to avoid loss.

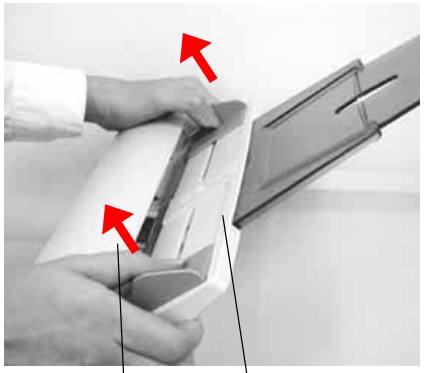
(5) After replacement, check the contacts and spare part mounting.

(6) Assemble the parts in reverse order of disassembly procedure.

8.3.2 ADF(AUTO DOCUMENT FEEDER) UNIT REMOVAL

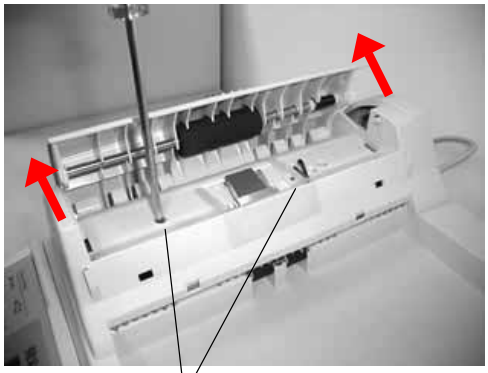
(1). Hold two ends of the Paper Tray and lift the tray to remove it from the machine.

(2). Push the front cover outwards and remove the fixing screws.



Paper Tray

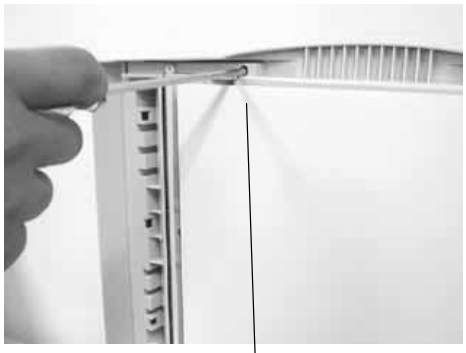
ADF Unit



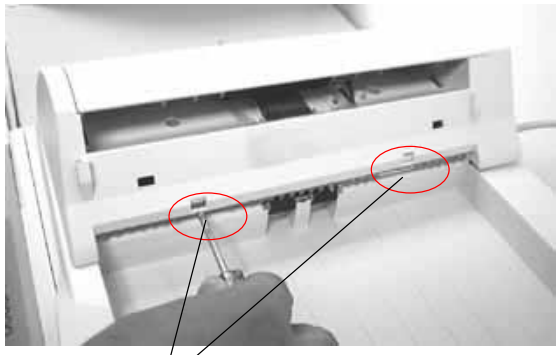
Fixing Screws

(3). Raise the document cover and then remove the ADF screw fixed on the document cover.

(4). Enter the ADF holes at the rear of the ADF unit with a flat screwdriver to loose the connection as illustrated below.

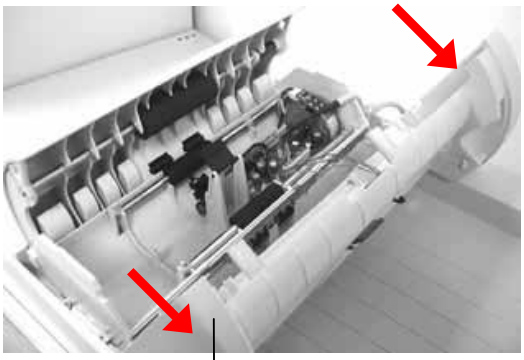


Screw



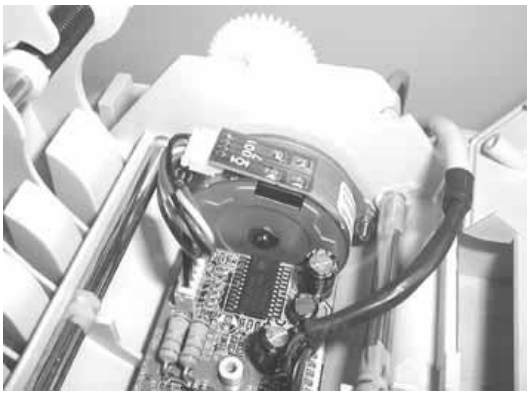
ADF Holes

(5). Push the rear cover of the ADF unit outwards as shown below.



Rear Cover of the ADF unit

(6). Disconnect all the cables. You can pull the ADF unit out now.

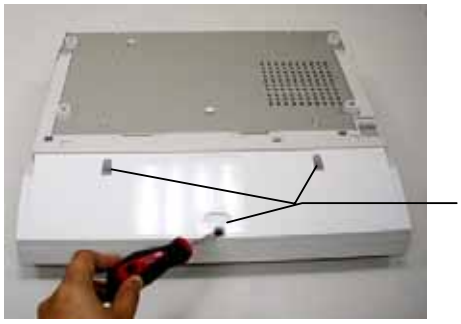


Note:

Please keep the screws after disassembly and follow the reverse order to reassemble the ADF unit.

8.3.3 CONTROL PANEL PCBA REMOVAL

(1). Turn the machine over and remove the screw fixed beneath the bottom.

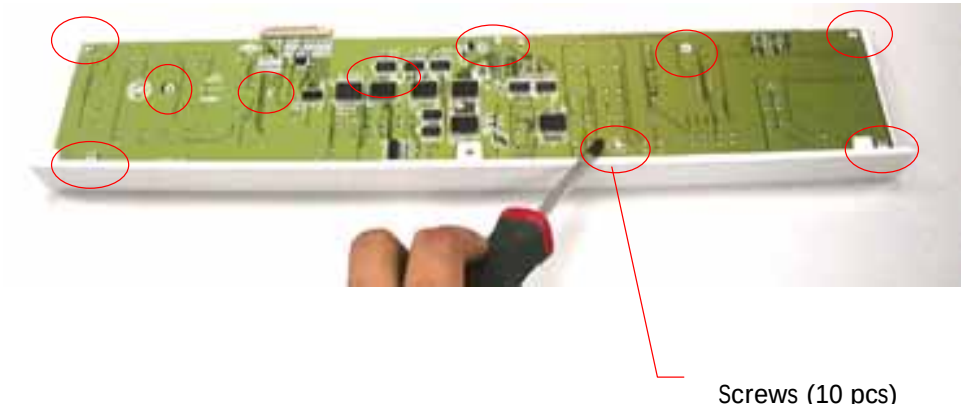


(2). Turn the machine back its normal position. Gently move the control panel assembly toward yourself to remove it from the machine.

(3). Disconnect the flat cable by gently moving it out from the connector.

(4). Pull the control panel assembly from the cover.

(5). Remove the screws fixed on the control panel board,PCBA.



8.3.4 DOCUMENT COVER

(1). As shown in the figure below, lift the document cover to remove the studs from the hinge holes. The studs are loosely attached to the hinge holes in the purpose to cover your original when it is a few inches high.

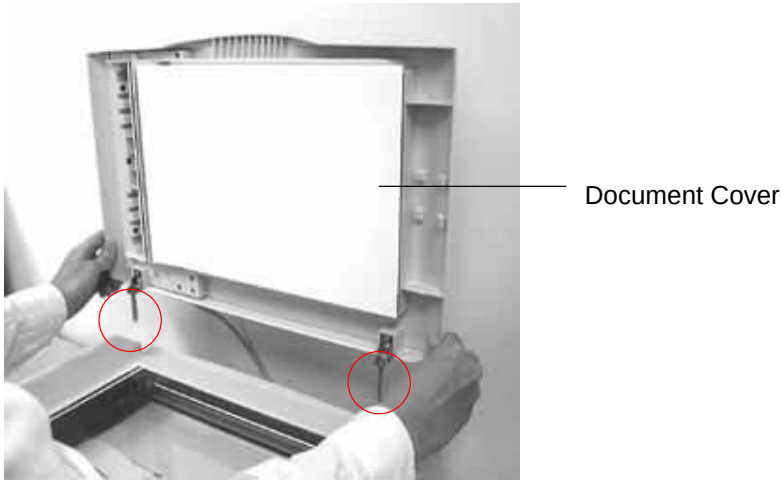


Figure 8.2 Document cover removal

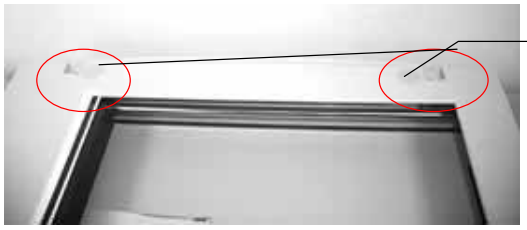
Note:

Before reinstalling the document cover, clean the document cover first.

8.3.5 UPPER HOUSING

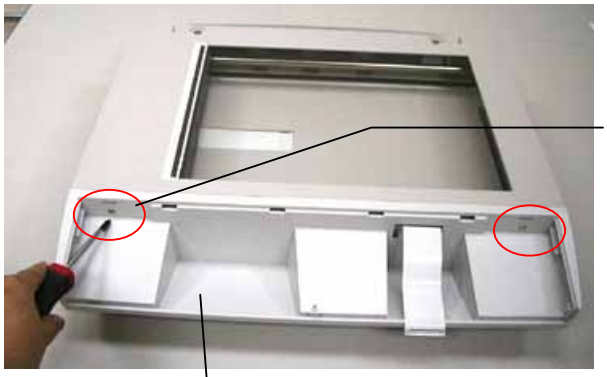
(1) Remove the document cover as described in the preceding section 8.3.4.

(2) Remove the rubber cover and the screws beneath the cover.



(3) Remove the Control Panel Assembly as described in the preceding section 8.3.3.

(4) Loosen the screws fixed on the bottom housing of the control panel.



(5) As illustrated below, push the bottom housing toward yourself to detach it from the machine.

(6). Lift the upper housing gently to remove it from the bottom housing.

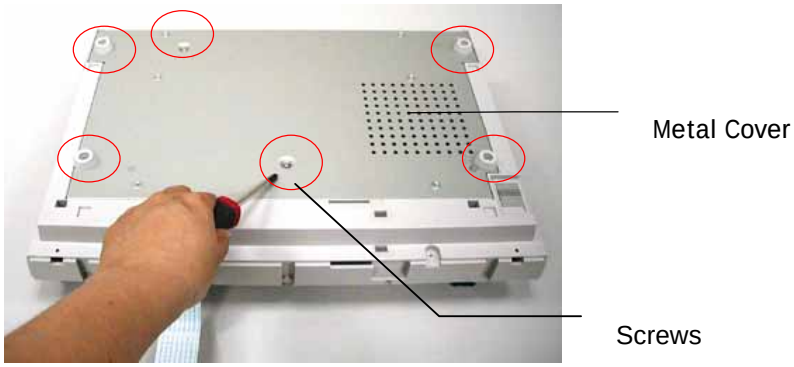
Figure 8.3 Upper housing removal

Note:

1. Before reinstalling the upper housing, clean the glass surface.
2. Please keep the screws and follow the reverse order to reassembly the upper housing.

8.3.6 MAIN CONTROL BOARD ASSEMBLY

(1) Turn the machine over. Loosen six screws fixed on the metal cover from the bottom housing.



(2) Pull the rear panel up as illustrated below.

(3) Loosen the flat cable and the screws on the metal cover.

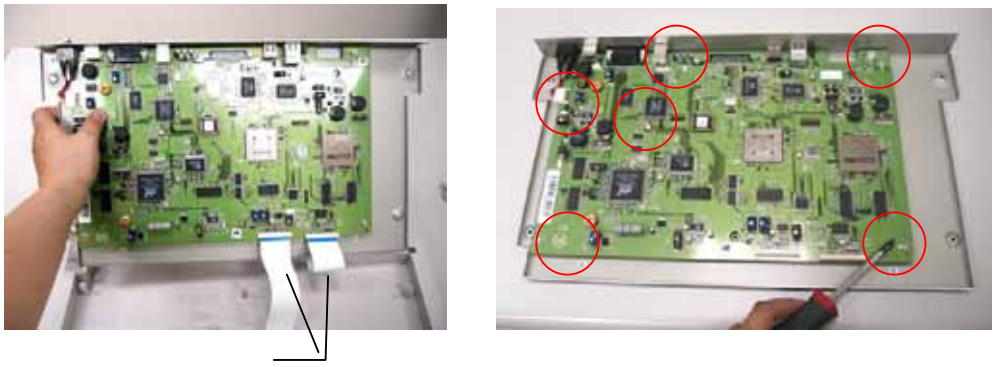


Figure 8.4 Main control PCBA removal

8.3.7 MOTOR BELT

(1) Remove upper housing and main control PCBA. (See preceding section 8.3.5 and 8.3.6)

(2) Move the optical chassis to the end as illustrated below.

(3) Detach the belt spring as illustrated below.

(4) Detach the end of the belt from the machine to remove the belt.

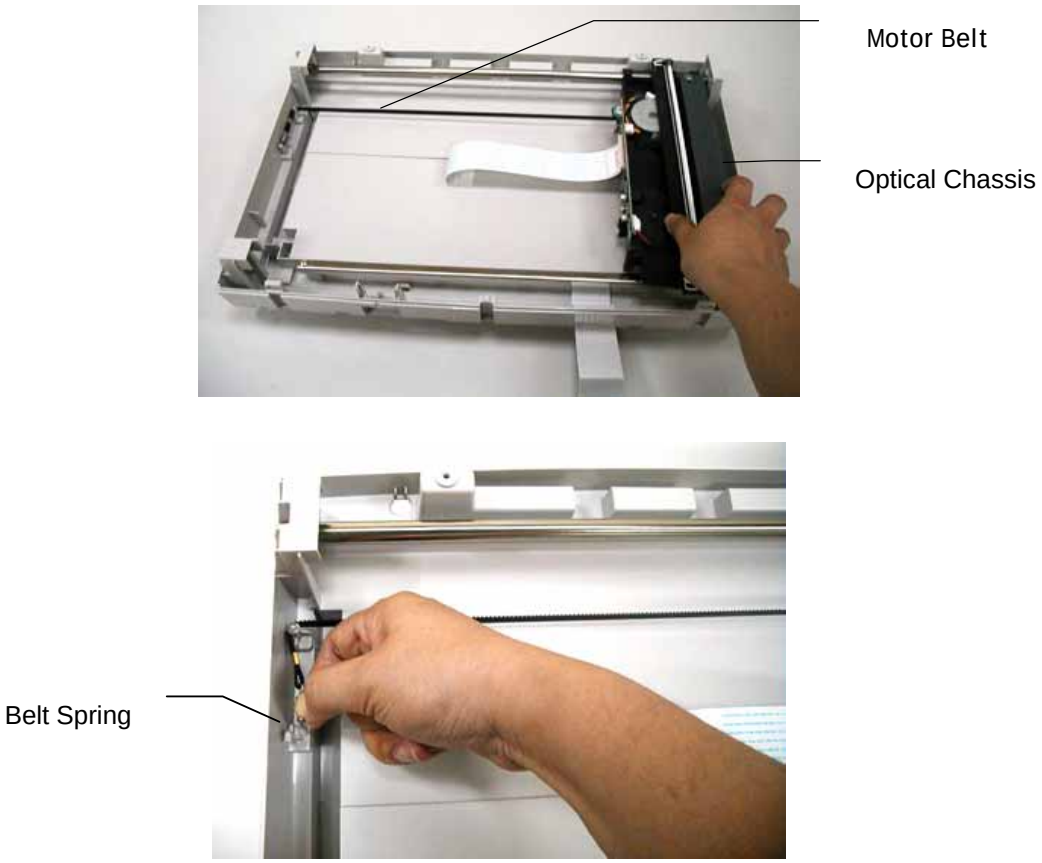


Figure 8.5 Belt removal

Note:

During the reinstalling process, be sure to keep the belt straight from losing tension.

8.3.8 OPTICAL CHASSIS

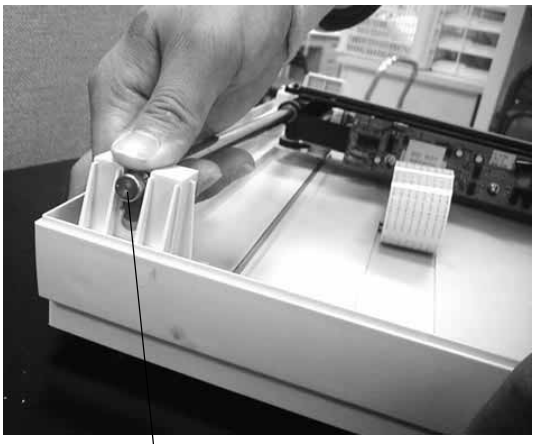
DISASSEMBLING PROCEDURE

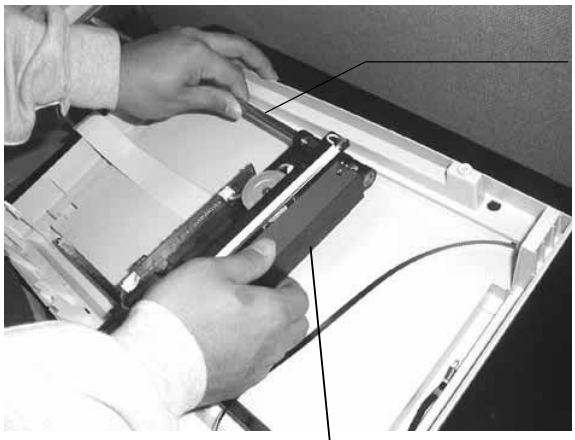
(1) Remove the upper housing. (See section 8.3.5)

(2) Remove the main control PCBA. (See section 8.3.6)

(3) Remove the motor belt. (See section 8.3.7)

(4) Lift the left end of the sliding rod and then pull it out gently as illustrated below.





(5) Remove the flat cable of the optical chassis.

Figure 8.6 Optical chassis removal

(6) Hold the right side of the optical chassis to remove it gently from the rod. (Be aware not to touch the CCD board as well as the lamp on the optical chassis.)

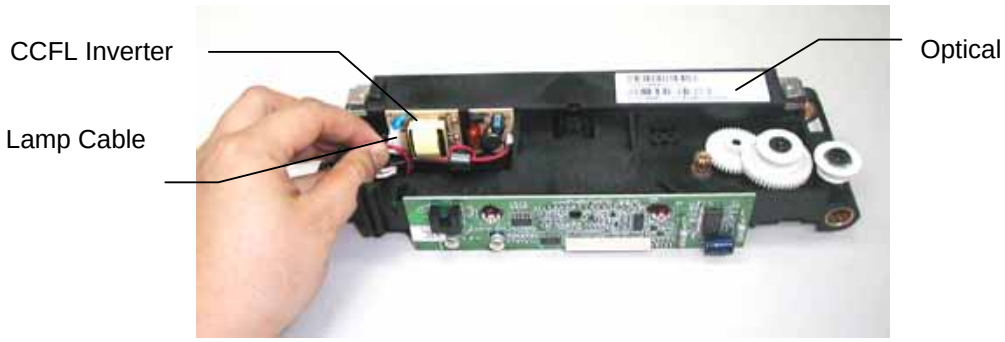
Note:

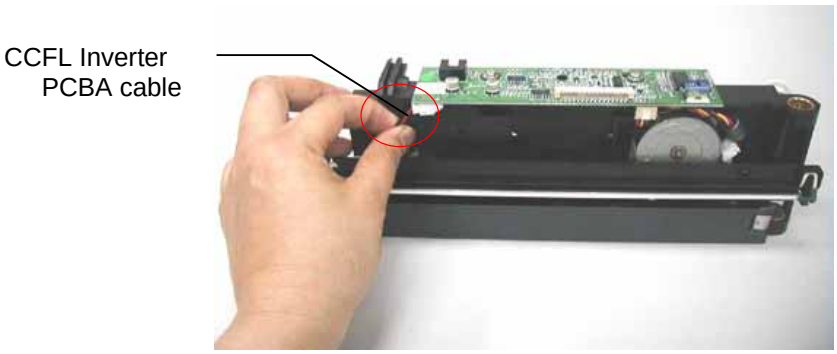
1. During reinstalling the optical chassis, be aware not to touch the chips of the CCD board as well as the lamp in the optical chassis.
2. During reinstalling the CCD flat cable, be sure the text of the flat cable should be face-up as illustrated below.
3. The manufacturer will not be responsible for any unauthorized action, which causes unexpected result.

8.3.9 CCFL INVERTER PCBA

(1) Remove the optical chassis. (See section 8.3.8).

(2) Disconnect all lamp cable and CCFL inverter PCBA cable.





(3). Cut the cable bondage with a special tool. Remove the inverter PCBA from the optical chassis.

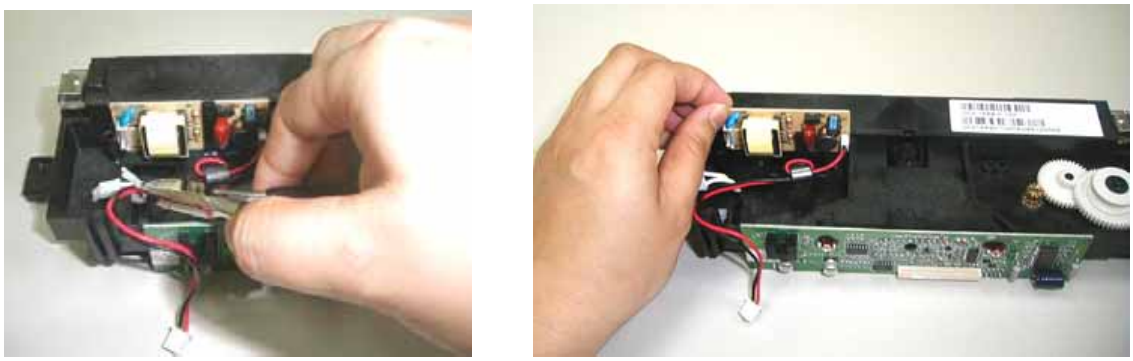


Figure 8.7 CCFC Inverter PCBA removal

8.3.10 LAMP ASSEMBLY

(1) Remove the CCFC inverter (See section 8.3.9)

(2) Loosen the screws of the lamp holder.

(3) Remove the lamp from the lamp holder.

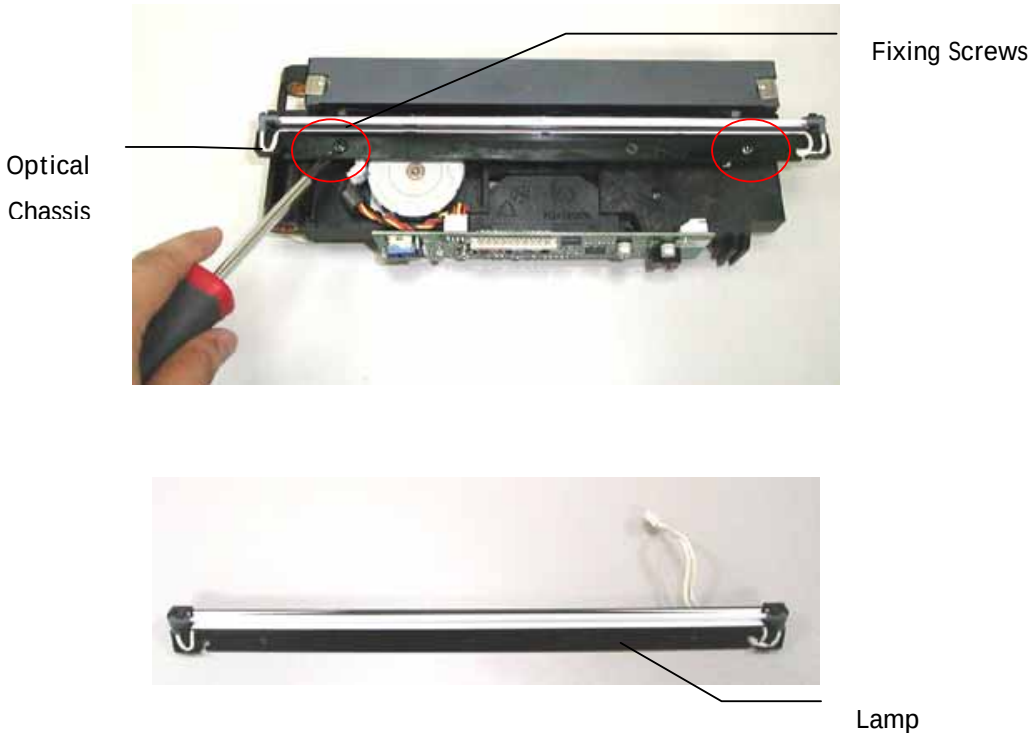


Figure 8.8 Lamp assembly removal

8.3.11 MOTOR UNIT

(1) Remove upper housing. (See section 8.3.5)

(2) Remove the optical chassis and the CCFL inverter PCBA. (See section 8.3.8 and 8.3.9)

(3) Remove the lamp assembly by loosing the screws. (See section 8.3.10)

(4) Loosen two screws fixed on the optical chassis as illustrated.

(5) Disconnect the motor cable and remove the motor from the optical chassis.

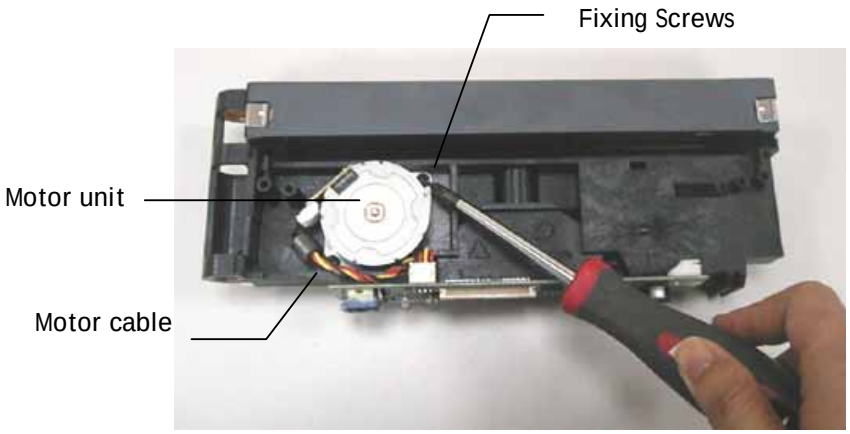


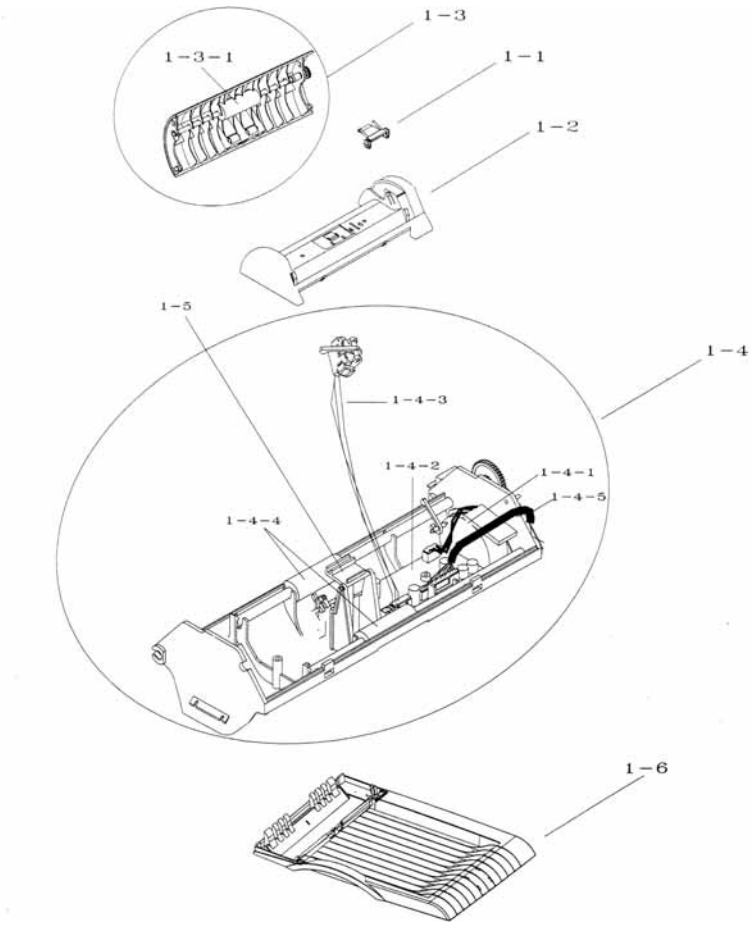
Figure 8.9 Motor unit removal

9. PARTS

9.1 Spare Parts List

9.1 SPARE PARTS LIST

The following 4 diagrams depict the spare parts listed on the spare part tables.



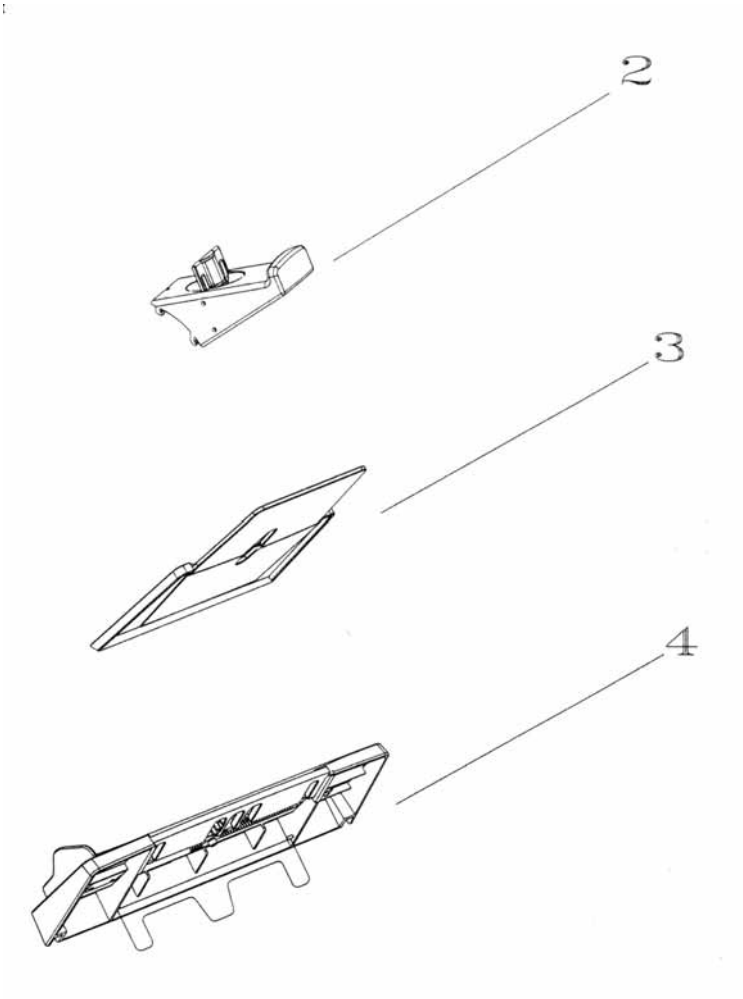


Figure 9.1 Spare Parts for ADF

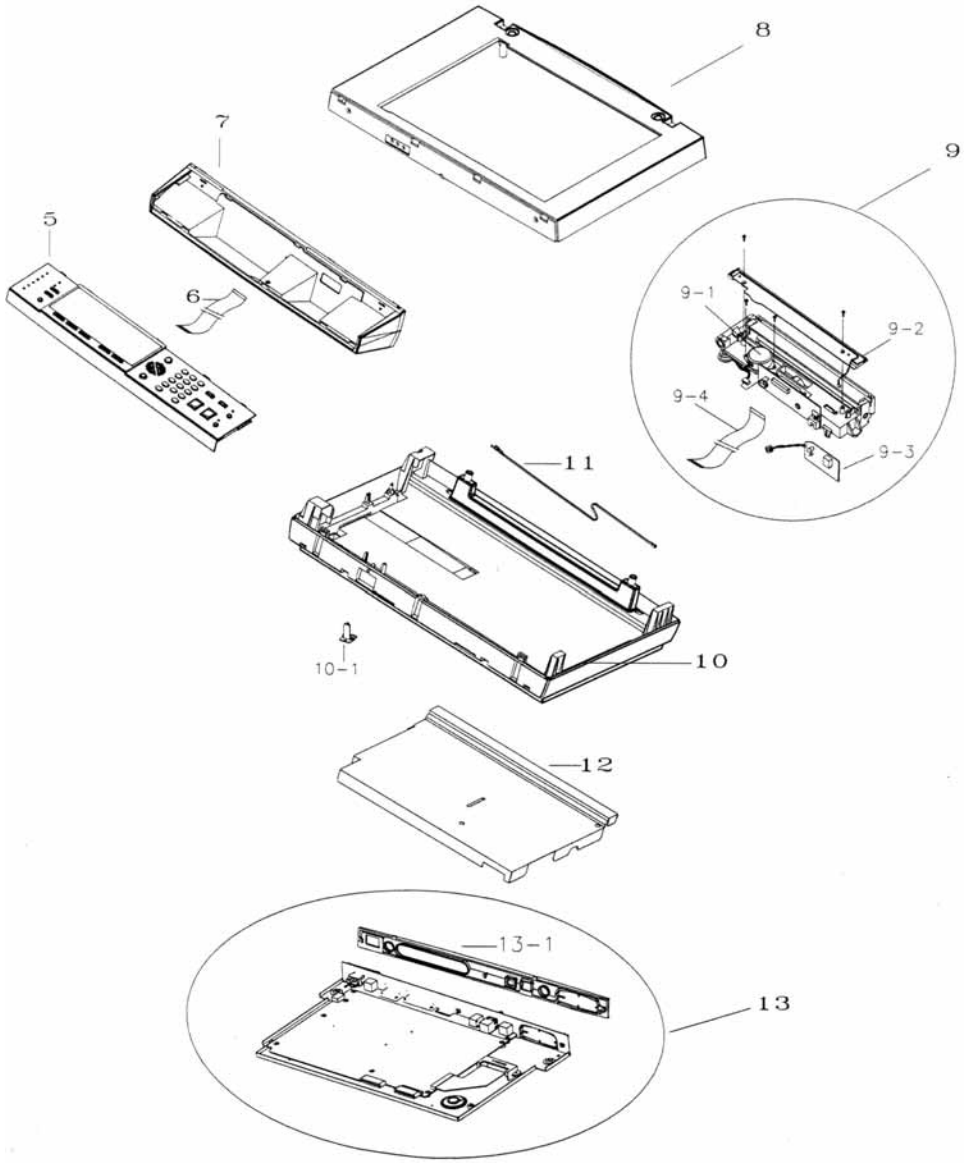


Figure 9.2 Spare Parts for Flatbed

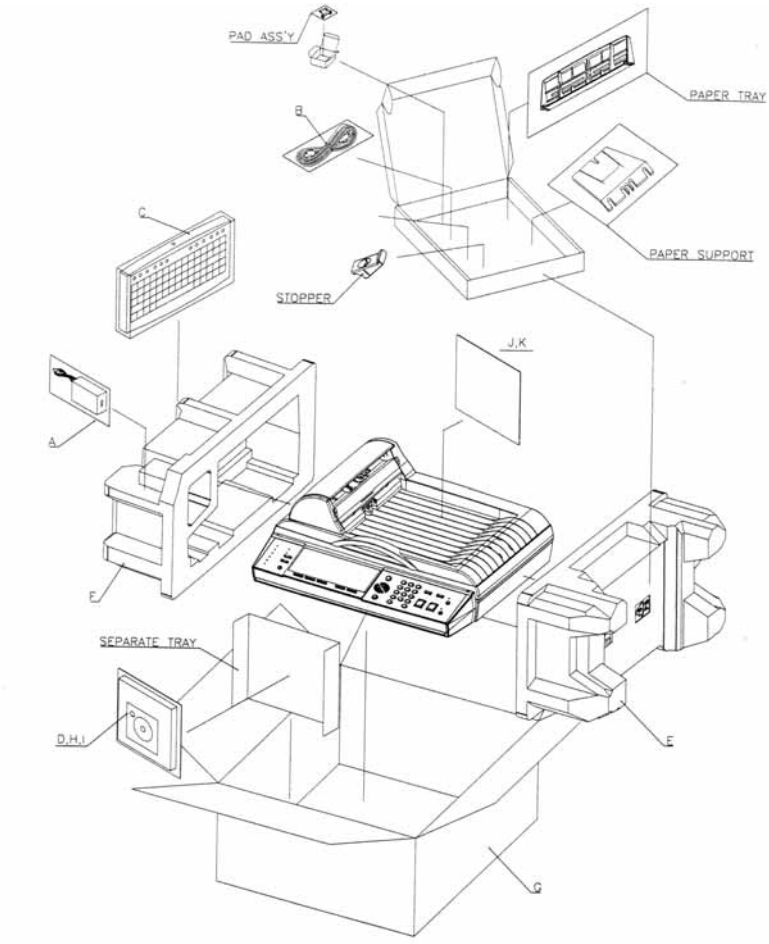


Figure 9.3 Miscellaneous Spare Parts

ITEM	DESCRIPTION	P/N	REV.
ADF PARTS			
1	ADF UNIT	002-0970-0-SP	1.0
1-1	ASS'Y,PAD	002-0697-0-SP	1.0
1-2	UPPER COVER+MYLAR	003-5287-0-SP	1.0
1-3	ASS'Y,FRONT CASE	002-0695-0-SP	1.0
1-3-1	ADF ROLLER	088-0034-0-SP	1.0
1-4	ASS'Y,MAIN CASE	002-1142-0-SP	1.0
1-4-1	MOTOR ASS'Y(與9-1同)	065-0053-0-SP	1.0
1-4-2	PCBA	004-0417-0-SP	1.0
1-4-3	L/P SENSOR ASS'Y	104-0136-0-SP	1.0
1-4-4	FEED ROLLER	088-0033-0-SP	1.0
1-4-5	ADF CABLE W/EMI CORE	104-0169-0-SP	1.0
1-5	PAD SUPPORT	053-0051-0-SP	1.0
1-6	ASS'Y,BOTTOM CASE	002-0971-0-SP	1.0
2	ASS'Y,STOPPER	002-1147-0-SP	1.0
3	ASS'Y,PAPER SUPPORT	002-0777-0-SP	1.0
4	ASS'Y,PAPER TRAY	002-1148-0-SP	1.0

ITEM	DESCRIPTION	P/N	REV.
FLATBED SCANNER PARTS			
5-1	CONTROL PANEL SET, US	002-1367-0-SP	1.0
5-2	CONTROL PANEL SET	002-1281-0-SP	1.0
5-3	CONTROL PANEL SET	002-1366-0-SP	1.0
6	FLEXIBLE FLAT CABLE: 32P, P=1.0, 300mm, DIFFER SIDE	104-0150-0-SP	1.0
7	FRONT COVER	051-0683-0-SP	1.0
8	UPPER HOUSING ASS'Y	002-0921-0-SP	1.0
9	OPTICAL ASS'Y	002-0917-0-SP	1.0
9-1	MOTOR	065-0053-0-SP	1.0
9-2	LAMP ASS'Y	002-0919-0-SP	1.0
9-3	INVERTER	003-0187-0-SP	1.0
9-4	FLEXIBLE FLAT CABLE: 30P, P=1.0, t=.035, L=400mm	104-0148-0-SP	1.0
10	BOTTOM+LOCK	003-5305-0-SP	1.0
10-1	LOCK	051-1034-0-SP	1.0
11	BELT ASS'Y	003-2178-0-SP	1.0
12	SHADING CASE	054-0269-0-SP	1.0
13	MAIN BOARD ASS'Y (MB114)	002-0914-0-SP	1.0
13-1	MODEM CABLE	104-0198-0-SP	1.0
13-2	REAR COVER	051-0749-0-SP	1.0

ITEM	DESCRIPTION	AV P/N	REV.
MISCELLANEOUS PARTS			
A	ADAPTOR: IIEC-3PIN 24V/2A(48W) 100~240V/50~60Hz	003-0305-0-SP	1.0
B	AC POWER CORD,125V/10A,1.8m(UL/CSA 美規)	104-0011-0-SP	1.0
B-1	AC POWER CORD: 10A/250V, 1.8m(CEE)	104-0012-0-SP	1.0
B-2	AC POWER CORD: 10A/250V, 1.8m(BSI) UK	104-0013-0-SP	1.0
B-3	AC POWER CORD: 10A/250V, 1.8m(SAA), AUS	104-0022-0-SP	1.0
B-4	AC POWER CORD: 7A/125V, L=2m(JIS), JPN	104-0044-0-SP	1.0
C	ASS'Y 14.4K MODEM	002-1260-0-SP	1.0
D	KEYBOARD: 310x170x20	003-0283-0-SP	1.0
E	CD-ROM	006-0191-0	1.0
F	EPS FOAM(L)	072-0154-0	1.0
G	EPS FOAM(R)	072-0155-0	1.0
H	COLOR BOX	073-0826-0	1.0
I	USER'S MANUAL: ENG、Germany、France	250-0341-0	1.0
I	USER'S MANUAL: Korea、Japan	250-0342-0	0.1
I	USER'S MANUAL: Italy、Spain、Portugal	250-0343-0	0.1
I	USER'S MANUAL: TWN ,CHN	250-0344-0	0.1
I	USER'S MANUAL: TWN,ENG	250-0335-0	1.0
J	QUICK GUIDE, TWN,ENG	251-0198-0	2.0
K	LOCK/UNLOCK NOTICE CARD:MULTILINGUAL	255-0536-0	1.0

Table 9.1 Spare Part Table